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The Principles of Teaching

W. M. RYBURN, M.A., LITT. D.

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PREFACE

IT IS VERY NECESSARY for everyone who takes up teaching as a profession to understand as much as possible about the principles on which the art of teaching is founded. At the same time there is always a danger that students, in studying theories, may not pay sufficient attention to the practical bearing of the theories they are considering, and may not see how all such theories have a very vital relationship to the ordinary work of the classroom. Hence it is very important to present theory in such a way that this practical effect is never lost sight of, and so that the practical implications may be clearly brought out.

In this book I have tried to keep what might be called a 'practical bias' all through, and have tried to show the practical implications of all the principles discussed. Any book on principles of education must necessarily have a good deal of theory in it. But the more the practical effects of those theories can be shown, and the more clearly the relationship between classroom work and underlying theory can be brought out, the more interesting and useful will be any such study for the practical teacher. Hence, in attempting all through to relate theory to practice, I hope to have made the book of some use to teachers, and more especially to those who are training themselves for the work of teaching.

Kharar W.M.R.
January 1944

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CHAPTER I

THE AIM OF TEACHING

THE ULTIMATE AIM OF TEACHING is a social one. Our object in teaching is to help those whom we teach to live fully, now, at their present stage, and in the future; to help them to learn the art of living with others. For when we live, we must live with other people. No one can live, in any real sense, alone. Therefore our ultimate aim in all we do for our children is a social one. Everything we do as teachers should help our pupils to develop as social beings, able to live in fellowship with their fellows. Even as we deal with our pupils as individuals, as we help them to develop as individual persons, our aim is to help them to develop as individuals in society, as individuals who can play a creative and constructive part in society, using all their powers and abilities for the good of society, able to co-operate and live as members of a team.

In order that human beings may live together in fellowship, at least three things are necessary.

1. There should be a common aim and ideal for life. This ideal must be one which is high enough to enable members of society to transcend selfishness and the desire for individual gain or advancement, and to enable them to sublimate those urges which lead to division and disintegration of social life. Such an ideal must obviously be a social one.

2. There should be a task to be performed by all. This will be a common task for all, in the performing of which each member of society will have a part to play. It must be a task that is big enough to capture the imagination, and to demand the loyalty of all, thus ensuring the devotion

of all bodily, mental and spiritual powers of all individuals to its accomplishment. Such a task must be a social one.

3. Essential for the acceptance of such an ideal and devotion to such a task is a feeling of comradeship, a knowledge that we are living and working *with* others for a common object. This results in a joy and power in life which comes when we feel that we are one with others, engaging with them in achieving a common aim.

We see this in a small way when, in a game, we have a team, which is a real team and not just a conglomeration of individuals, playing together as a whole, each individual geared to the work of the team as an integrated unit in the whole, with no thought of himself as an individual, doing his share as one in a social unit, devoted to the best functioning of the team as a whole.

Whatever may be the social unit of which the individual is a part, the very fact that he is living and working as one in a group increases his power, expands his life, gives him a feeling of significance in the group and a joy in living, that makes for great achievement.

In all our teaching, then, our aim is to give those whom we teach the chance to develop socially, that is, as members of social groups. They will do this at first in small ways, in little groups, performing tasks suitable to their age and capacity. Gradually their horizon will expand. They will accept higher ideals and will attempt greater tasks, until they go out prepared to play their parts in the greater society of their fellows, able to demonstrate, in a practical way, the art of living together with others. This ultimate social result must be the background of all our thinking, of all our methods, of all our relationships with our children.

From this it follows that our aim in teaching will also be to help our pupils to develop a social sense and social responsibility. The result of the training that pupils get in school should be that they develop the habit of thinking of the result of their actions on other people. Gradually they should realize that they cannot live to themselves. As we teach them to understand how they depend on society for the supply of their needs and for opportunities to use their powers, so we also teach them that they have the responsibility of doing for others what has been done for them. We teach them that as a part of society they have a responsibility for the right functioning of society. We teach them that as they have rights and can expect privileges from society, so they have duties and obligations to see to it that all get the same privileges and things which they themselves want and need. Thus a sense of social responsibility should gradually develop. The aim of teaching will be that pupils learn the habit of universalizing, that is, of thinking, 'If everyone acted as I am doing, what would be the result?'

It follows from this that our teaching must be forward-looking. Our task is not just to give information that has been handed down to us from the past, or even that we glean from the present. The task of the teacher is mainly concerned with the future. In his hands are those who will make or mar the future. In everything the teacher does he must have an eye on the effect of words and actions on the future lives of those he teaches, and therefore on the future of the community in which he lives. This fact will determine his attitude to his pupils, his methods, the information he gives, and his attitude to life. Does the teacher think of his pupils as being just receptacles into which he is to pour information coming from the past? Or does he look on them as potential creative forces through whose constructive work a new spirit may be brought into society in the future, as active agencies of progress in the true sense of the word? If the latter is the teacher's attitude, then information becomes merely one means of helping on a social development of the personality, and his horizon will be far wider than it can ever be when it is bounded by the idea that his job is simply to hand on information from the past.

The forward-looking nature of teaching will also determine the methods the teacher uses. His idea of method will not be confined to the matter of how he is to teach a particular subject or a particular aspect of a subject. This is important in its place. But method is a much wider and more potent thing than this. The forward-looking teacher, with his ultimate social aim before him, will realize that the all-important aspect of his work is the relationship between himself and his pupils, and that what counts in achieving his aim is the methods of dealing with the persons in his charge. He will be concerned with what he, as a person, can do to help those persons whom he teaches to use all their powers and to develop to the full stature of human beings, and such a human being must be fully developed socially. In other words, the teacher will be concerned with how he can establish fruitful creative relationships between himself and his pupils, and with how he can help them gradually to develop true social relationships with one another. His concern will be to have such an influence with his pupils that they will not be content with things as they are, but will gain an ever-expanding vision of things as they should be; that they will never be content to rest on the opinions of others, but will develop mental and emotional independence, learning to think and feel and act for themselves.

For this it is necessary that the teacher pay considerable attention to the matter of the ideals and purposes for life which are accepted by his pupils. As the personality develops it is essential, if it is to be integrated into a dynamic whole, that one overmastering ideal for life be accepted. This acceptance of an ideal usually takes place during adolescence, but the way for the acceptance of a worthy ideal for life must be prepared from the time the child comes to school and it must be the ultimate aim of all teaching that this final coping-stone be successfully placed on the building of life. This is not accomplished only by direct teaching. The suggestions pupils unconsciously receive from the life and example of the teacher will have a powerful effect on them. At the same time, in the teaching of different subjects, history, science, literature, many opportunities will arise for the presenting of worthy ideals. Here also is one of the main functions of religious teaching.

The forward-looking nature of teaching, with its social implications, will also determine the use that the teacher makes of the past. We always have to select what we shall teach. In each lesson, in each course of lessons, a selection must be made. In framing a syllabus we have to make a selection of subjects to be taught. We cannot teach everything. The selection we make will be guided by our social aim. We shall select those things which will help our pupils to grow into citizens with a social sense and a social ideal. We shall help them to understand where and why mankind has failed in achieving this social aim in the past, particularly in the teaching of history. We shall select subjects and material which will help them to live fully as social beings, at the stage they have reached, and so prepare them for later life in society. In other words, we shall use the past for the benefit of the future, sifting the chaff from the wheat, inculcating the lessons that can be learnt from the successes and failures of the past. But always what we teach and how we teach will be determined by our aims for the future.

When we accept a social aim for our teaching, and when we have the forward-looking attitude, it means that we must have a more or less clear idea of the direction in which we wish to go. It is not necessary for us to have a detailed blue-print of what future society should be. But there must be general agreement on the ideal towards which we are to work, and the general direction in which we wish to advance. It is the conviction of the writer that democracy supplies the teacher with this general direction. The truly democratic way of life is the way of life for which we should be helping our pupils to prepare.

Now democracy and the democratic way of life involve far more than a political system. Democracy is a way of *life* and therefore the principles of democracy must be applied to the economic and social aspects of life as well as to politics. It is obvious, therefore, that though we can give a fairly definite account of the principles of democracy, mankind is yet only at the beginning of experimenting with democracy in economic and social life. When we say then that democracy supplies us with the social ideal for teaching, it means that the purpose of our work is to start young people in the right direction, to give them the ideal towards which they are to work, to teach them the principles according to which all aspects to life should be ordered, to develop in them the creative urge and the spirit of adventure which will enable each of them to do his bit in advancing mankind along the road which will lead to the fully democratic way of life.

Teachers can all understand what is meant by democracy, at least in theory. They, along with other citizens, will do their share in working for democracy, in experimenting in bringing the ideals of democracy into practice. But their great work will be to instil into their pupils a knowledge of what democracy is, a faith in democracy, and a determination to do their best to make society democratic in every respect. If the teacher accepts the democratic way of life as the ideal for the future, then that will determine the principles according to which he works, the methods he uses and the direction in which he guides his pupils. But from his influence on the future he cannot escape. Either he will, in his small corner, aid mankind in its upward struggle towards better things, or he will contribute to the stagnation and destruction of civilization as we know it today. Each teacher must choose what he will do.

CHAPTER II

THE NATURE OF TEACHING

THERE ARE THREE FOCAL POINTS in education, the teacher, the child, and the subject. Teaching, in the first place, is a relationship which is established between these three. This is illustrated in the sentence, 'The teacher teaches history to Ram Prashad'. In this sentence is expressed a relationship between three nouns. These nouns stand for two persons and a thing; the teacher, the pupil (Ram Prashad) and history (the subject). The verb 'teaches' brings all three into a relationship. This then is the first function of teaching. We have a person, whom we call a teacher. He is an adult. We have a child, and we have a subject. Teaching is the process by which that adult brings that child and that subject together.

All three 'elements', as we may call them, have their place in the relationship. We cannot have 'teaching' without all three being present. But, as we see from the position of the nouns in our sentence, the teacher is an active agent in the process of establishing and developing the relationship. We shall see later, when we consider the nature of learning, that the child is also very active. But when we look at the process of education from the point of view of 'teaching', then we are considering the characteristic activity of the teacher. He actively 'teaches' his pupils. While we are considering the nature of teaching we are concerned with the activity of the teacher. When we consider the nature of learning we are concerned with the pupil's activity.

Now when the teacher seeks to bring his pupils into relation with certain subject-matter, there are a number of things which he has to know if he is to have any success in his work. One of the most important of these is the nature of the child he is trying to teach. That is, he must have a knowledge of child nature in general, and also, as far as possible, of the natures of the particular children he is teaching.

The teacher must remember that every child differs from every other child. He must realize that children differ in bodily health and in bodily powers; that they have varying degrees of intelligence; that they have different abilities; that they have different temperaments. He must always keep before him the fact that the home environments of no two children are the same, that they have different interests and different opportunities for developing their interests. Again, while the level of general intelligence of two children may be more or less the same, they will differ widely in specific abilities. And even when two children have more or less the same specific ability, they may have very different opportunities for developing that ability. The emotional development and stability of children will differ greatly, as will their moral qualities. The teacher's success in establishing a fruitful relationship will depend on his realization of these points of difference, and on his taking a practical account of them.

The teacher also has to have a sound knowledge of himself, so that he may understand his own feelings and his own behaviour to his children. He must have a knowledge of the subject that he is trying to teach his pupils. He should have a knowledge of *how* to connect the child and the subject; that is, a knowledge of method. He should have a knowledge of the probable effects on the child of himself and his personality, of his habits and actions, of what he says and does. A knowledge of the effects of these things on his children is very important, and can help a teacher very greatly to use correct methods. It thus makes for better teaching. It is important also that a teacher, one who is actively engaged in helping to develop a young life as it meets the different situations it comes up against in school and out of school, should have a definite attitude to life; what we call a philosophy of life. He should have definite convictions. He should have high ideals. He should have trust and belief in God and in his fellow men. He should have a passion for truth and for its propagation. He should be devoted to the service of his country and of the world at large. As far as possible he will be thinking his way through to a definite attitude to the world and life, to the values we sum up as goodness, beauty and truth.

> The teacher then must regard on the one hand the nature of the child to be taught, and on the other the nature of knowledge in general and of the special piece of knowledge to be imparted in particular. This is

> what is meant when it is said that the theory of teaching rests both on psychology and on logic. For knowledge of the modes of mental life of those to be taught is psychological knowledge which a study of psychology may help us to attain, but cannot give us. Such knowledge can be reached only at firsthand, by sympathetic study of the children we have to teach. Mere psychological insight, however, will not make teaching effective. For children's minds often work inaccurately, and are, moreover, apt to rest satisfied with very imperfectly attained results. Hence teaching must set forth the material of knowledge in such a form that its true inherent relations may be grasped and that the dependence of part upon part may be made explicit. This is what we mean by the application of logic to teaching. All teaching is logical which sets forth true relations within the matter of knowledge.[1]

This leads us to another aspect of teaching. Teaching is giving information. It is exposition. When a teacher is teaching he is often giving new information to his children. There are many things that they cannot find out for themselves. There are many things that they would never know unless they were told. There are many things of which they do not realize the need or use. These things they have to be told. Especially in the primary school will a good deal of a teacher's time be taken up with telling his pupils things, with giving them information, with telling them how to do things, with telling them where to find out things. One essential part of teaching is communicating knowledge.

The art of story-telling is one of the most important that a teacher can cultivate. A good story-teller will always find his work of communicating knowledge easy.

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[1] J. Welton, *Principles and Methods of Teaching* (University Tutorial Press, 1929), pp. 19-20.

This work can also be made more interesting and attractive if it takes the form of play. All types of teaching work are more effective when done in the spirit of play, and the communication of knowledge is no exception. In this connexion we will consider certain things at greater length later on ; as, always to link up the information we are giving with something that the child already knows ; to make our exposition clear and orderly so that the child may follow and understand easily what we are trying to impart. Especially important is it to make sure that the child understands properly the words we are using. A great deal of the informational side of teaching misses the mark because the teacher uses words of the meaning of which the children have only the vaguest idea, and of which they sometimes have a completely wrong idea. It is common sense to make sure that our children understand what we are talking about. It is also common sense not to go too quickly, and to consolidate as we go. If we go on piling in information and do not pause to see whether it has been assimilated or not, a great deal of our effort will have been wasted. To put this shortly it simply means that when giving information we must keep in mind the two aspects of our work, first the child and his powers and nature, and secondly the subject and its orderly presentation.

But, important as it is, the giving of information is not the most essential aspect of teaching. Still more important is the fact that teaching is 'causing to learn'. It is not even half the battle to tell the child things. Our main task as teachers is to cause the child to learn. It is not what we tell a child that really teaches him, in the true sense of the word. It is the reaction that we call forth from him. In other words, real teaching is not what we do for the child, but what we can persuade him, by one method or another, to do for himself. This is a most important truth, and is the foundation on which all our work and all our methods should be founded. The most fundamental principle of teaching is that teaching means helping a child to learn and to do things himself. The teacher therefore is an instrument. He is there to cause learning, to help development, to enable the child to establish his own relationship with his subjects and his environment.

> It is only when the teacher clearly appreciates the instrumental character of his work that teaching fulfils its true function of causing others to learn. And 'to learn' here implies power to do as well as power to understand : it means the attainment of knowledge in the sense of power to deal effectively with situations.[1]

So that even when we have to tell, and to give information, our purpose is not so much that the child may simply accumulate knowledge as papers are stored away in a godown, as that we may secure the right response from him, that he may learn to make the right response to different situations, that he may have the tools to enable him to make an effective response. Teaching from this point of view is a matter of helping the child to respond to his environment in an effective way.

> It is not what is presented to the child which educates him, but rather the reaction that he makes to what is prepared. Certain children may fail entirely to respond to a lesson, or may respond in a wrong manner. If a child's response to his geography is to memorize the words, without any understanding of the facts they represent, the lesson is not educative

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[1] J. Welton, *Principles and Methods of Teaching* (University Tutorial Press, 1929), p. 21.

> for him (he has not been *taught*) although it may be educative for the child next him who reacts properly.[1]

Following on from this, we see that teaching is helping a child to adjust himself to his environment. From birth the child is reacting in some way or other to his physical and social environment. Some of these ways are fruitful and help the child to develop, while others are the reverse. For example a child learns to love his parents. This is a fruitful reaction because love is necessary for all true development, and is an active creative force. But the child also learns to be jealous and selfish. These are harmful reactions. When the child meets a difficulty at home or at school, sometimes he will try to conquer the difficulty. This is fruitful reaction. Sometimes he will try to avoid it and escape from it. This is a harmful reaction. So, all through life, adjustments of this sort are going on. Part of the business of teaching is to help the child to make correct adjustments to his environments. This may be done either by modifying the environment or by strengthening the child. One reason why we have schools is that the child may have a chance of meeting the difficulties of life step by step, and not all at once, that he may have time for preparation for what he has to meet later. When teaching we can give our children opportunities to use their powers in the right way, and thus help them in this process of adjustment. For example, the child has the power to fight and struggle. If our teaching is good he will learn to use this power to conquer difficulties in his work. He has the power to co-operate. If our teaching is good he will be learning to use this power in beneficial ways. This business of helping the child to adjust himself to his environment is one of the important aspects of teaching. His social, spiritual and physical development depend on it. One of our aims is to make the child socially effective; that is, a worthy member of society, making his contribution to the common good. True adjustment to environment is the necessary foundation for this.

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[1] F. N. Freeman, *How Children Learn* (Harrap, 1936), p. 8.

> We may sum up the function of the school as being (i) to provide the kind of environment which is best suited to individual and social development; (ii) to stimulate and guide healthy growth in this environment; (iii) to enable children to acquire the habits, skills, knowledge, interests and attitudes of mind which they will need for living a full and useful life.[1]

I would like to direct attention to the word 'stimulate' in the above quotation. Stimulation and inspiration are important aspects of teaching and we cannot understand its real nature unless we take its inspirational aspect into account. The teacher should be one who fires the enthusiasm of his children. He encourages them in the development of their natural desires to work and to be active, and guides these desires into worthwhile channels. This, at least, should be one of his chief aims. Education has been defined as encouragement. We have seen that it is causing children to learn. In order to cause them to learn, we have to rouse their enthusiasm, desires and interests, and guide those enthusiasms, desires and interests in the right way. Every child has in him the inherited tendency to be active, and this shows itself along the lines of the different instinctive tendencies. A major part of the work of teaching is to provide opportunities for the exercise of this desire for activity and to give children the encouragement which will help them to use the tendency to be active in helpful and fruitful ways.

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[1] *Handbook of Suggestions for Teachers* (Board of Education, London), p. 15.

Encouragement indeed must always be an important element in teaching. This involves a knowledge of the psychological make-up and background of individual pupils. Naturally some need encouragement more than do others. But in every class there will be pupils who are fearful of taking the initiative, of adventuring and of trying themselves out. This is often the result of a feeling of inferiority, of which there can be many causes. But in all such cases encouragement will usefully take the form of finding out what the child is interested in and what he can do with some degree of success. He can then be given the opportunity to engage in this particular activity, whatever it may be, while due praise of his effort, if not of the final result, is given by the teacher. Encouragement will also take the form of grading carefully the work given to the child, so that he is required to do only what he can fairly easily accomplish. As he gains more self-confidence the difficulty of tasks may be increased. Encouragement also involves a study of home conditions and the social life of pupils, so that difficulties there may be sympathetically discussed with the child and measures taken to deal with such difficulties.

But while it is true that children like to be active and to do things themselves, we must never lose sight of the fact that they need guidance, and need it right through their school course. Teaching is not only encouragement, it is also guidance in the exercise of the activity which has been aroused. The teacher has to guide his children to learn the right things, and to learn them in the best way. This last mentioned task of the teacher is one whose importance cannot be overestimated. The teacher has to guide his children to do things in the best way so that in matters of skill, time, material and energy are not wasted, and the best results are obtained. He has to guide his children in the way they study, in the way they learn, in right methods of thinking and of evaluating evidence. He has to guide the appreciation of his pupils, and so train their emotions. He has to set good standards of work and conduct. In a word, he has to guide his pupils in all the adjustments they make to their environment, physical and social, as they gradually develop and grow.

This guidance will be carried out in different ways. The teacher will vary his method according to the individual pupil and his needs, and according to the subject-matter. One important aspect of this matter of guidance is motivation. The teacher will always be on the alert to secure the best possible motivation for what is done. He will guide in the forming of interests, taking into account the special abilities of individual pupils. He will help his pupils to discover what these aptitudes are, by giving them opportunities in the lower classes to try themselves out on various kinds of activities and creative work. He will guide them in the use of their instinctive powers, enabling them to sublimate these powers, and to form worthwhile sentiments. He will guide them as they adopt an ideal in life. The teacher guides best through suggestion and example. The way he works, the methods he uses, his habits and his attitudes, all these are, for good or for ill, guiding his pupils as they adjust themselves to life.

But at the same time the teacher guides more definitely and deliberately by means of discussion, by giving advice as concrete problems arise, and by personal conversations with his pupils. He also guides by the emphasis in his teaching.

In the practice of instruction therefore there are two essential processes :

(*a*) Presenting educative material for the use of the pupils—whether concrete perceptual objects or verbal material.

(*b*) *Guiding the mental activity* of the pupils towards the significant educative elements of this material. By this means they become explicitly aware of these elements, and apprehend them in the highest degree of clarity possible at that level of their development.

This second aspect—guidance—is what distinguishes really effective and intellectually stimulating teaching from mere routine instruction. It has the effect of turning the learners' mental gaze to the light instead of keeping it for ever towards the shadows.[1]

While teaching means the providing of opportunities for the child to exercise its desire to be active, it further includes the training of the emotions of the child. Action depends on feeling. If we wish for right action we must secure right feeling. If we wish for right development we must help children to develop interests in worthwhile things. Thus teaching is not simply a matter of encouraging and developing the mental and physical powers of the child. It is also the encouraging and training of the emotional life. This is an aspect of teaching which is very commonly neglected, at least in practice. But our teaching will be very one-sided and distorted unless we take into account the necessity for helping the child to develop a stable emotional life.

This is a subject which needs far more space than can be given to it here, and in which there is need for a great deal of research and experimentation. I can only indicate some factors to which attention must be paid if we are to have any real understanding of what is involved in this aspect of teaching.

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[1] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941), p. 267.

Good teaching should enable children to develop emotional stability. To do this the child needs affection. It is not the task of the school alone to provide an atmosphere of affection for the children who come to it. It is primarily the task of the home. But whatever the home does, or should do, the school must do its best to see that the children who attend it feel that in school they are among those who are friendly and affectionate to them. Teaching will lose a very great deal of its value, no matter how up-to-date in method or how efficient in organization, unless it brings to the child the sense that he *matters* to the teacher, and that the teacher is on his side against the many things with which he has to struggle ; in other words, that the teacher is his friend.

One of the chief advantages of such a friendly atmosphere is the resultant sense of security which the child feels. This is most important for the development of emotional stability. A child's emotional life cannot develop as it should if he is in the grip of fear and uncertainty. The feeling of insecurity leads to repressions, and all the disastrous consequences that follow in their train. Fear is at the bottom of a great number of emotional extravagances, especially in these days. Hence the importance of engendering a feeling of security by means of affection and friendship.

We have to remember that friendship is not softness. We have to avoid fixations due to overpowering affection on the part of parent or teacher. But it is possible for a child to stand on his own and to do things for himself, and yet feel that he has behind him the sympathy and interest of a friend who is ready to give him the best type of help. As in so many things we have to steer a middle way. Neither too much spoon-feeding and softness nor too much callousness and hardness is the ideal.

Another beneficial result of the teaching which is founded on friendship is that it encourages the child to be frank and sincere. He is not tempted to retreat within himself and to hide things. He gets into the habit of bringing things into the open, and of talking about them to an audience that he knows is sympathetic. He is willing to talk about his experiences, and hence the danger of repression is much lessened. A healthy attitude of frankness can result in nothing but good as far as the emotional life of the child is concerned.

Such frankness and sincerity result in sincerity of feeling and this is a very important factor in training the emotions. If children feel that they can say exactly what they feel, on the one hand they get into the habit of feeling for themselves, and not trying to feel as they think they are expected to, and on the other hand the teacher knows exactly where he is with his children, and is therefore in a far better position to help and guide them. Too often our teaching is such that we try to make our pupils feel as we think they ought to feel, and this result in fundamental insincerity of life and character. Children in school should be allowed to have their own feelings and should not be led to ape the feelings of someone else. They should not be taught to try to feel something to be beautiful when their feeling is an artificial one, and they really do not feel the thing in question to be beautiful. Perhaps they ought to feel it to be beautiful, but until they have reached that point for themselves, it is hypocrisy for them to say they think it beautiful or to agree that it is beautiful. They should not think that they have to appreciate a poem just because their teacher does so, and seems to expect them to do so. They may, through the help and suggestions of the teacher, gradually see for themselves the beauty of the poem; but it must be their own feeling and not a second-hand one screwed up to meet the requirements of a lesson or a teacher. The first essential in teaching is that it shall lead children to be sincere. Then the teacher can form his plans for helping them to progress.

This does not mean that we are simply to leave children to feel as they like, and to make no attempt to guide them. It means that we shall aim at helping children to have the right emotions themselves. If a teacher finds that there is lack of sympathy when he thinks sympathy should be shown, then he can lay his plans for helping his pupils to develop the power of feeling sympathy. If he finds indignation lacking when he thinks it should be shown, then again he will make his plans to deal with this situation. But real teaching will never result in second-hand feeling.

Another beneficial result of a relation of friendship in teaching is that it minimizes the danger of the child harbouring feelings of guilt and of inferiority, both of which can cast such a blight over the emotional life of children at different stages of their lives. Sincerity, founded on a knowledge of feelings of affection and friendship in the teacher, will enable this tendency to instability to be overcome.

An atmosphere of friendship also enables the teacher to help the child to feel that he is of some significance in the community. This sense of significance is of great importance in the development of the child. When he feels that any contribution he may make to the life of his community, his group, his class, his school, his village, is of some value and is appreciated, it gives him courage to believe in himself and his powers, and therefore to try out his powers. It helps him to develop self-reliance, self-dependence, and self-confidence. It enables him to conquer any tendency towards a feeling of inferiority. He is not afraid to make experiments in adjusting himself to his environment. Because man is a social animal, recognition by society, value placed by society on the individual, plays a big part in helping the individual to achieve a normal and true adjustment to society. The friendship and affection of others is fundamental in developing a feeling in the child that he is of value to those among whom he lives, and that what he does is of some use to others. However unconscious the young child may be of this desire for recognition, the urge is present in everyone, and the teacher's job is to sublimate this desire for recognition. This can best be done in an atmosphere of friendship and encouragement.

As we shall see, activity must be prominent in all our work. In seeking to help the emotional lives of his pupils the teacher will always be on the lookout for opportunities for his pupils to express their emotions in action. Emotion, once roused, tends to issue in action. It is the job of the teacher to see that such action follows. Too often emotions are aroused in school, but no opportunity for action is provided. This means that the emotion loses its strength and the whole personality of the child suffers.

It is not simply action that is required, but action along worthwhile lines. In other words we have to guide our pupils into such activities as will sublimate their instinctive urges to action, and will help them to organize their instincts, with the attached emotions, round worthwhile centres, to form worthy sentiments. It is this organization into sentiments that is one of the great tasks of teaching, on which the whole formation of character depends. As the emotions are attached to good objects, so are they trained and so is the character formed. Hence, from this point of view teaching is a matter of doing what one can to

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enable sublimation to take place in the gradually developing lives of those who are being taught. From the pupil's point of view this is an unconscious process. From the teacher's point of view it is a difficult task for which the study of each individual pupil is necessary. It is a task for which the most careful planning and work are necessary.

We have said that teaching is inspirational. In no direction is this truer than in the developing of the emotional life of the child. Gradually as the pupil grows, teaching should be inspiring him to accept an ideal for life which will co-ordinate all his powers, will enroll his sentiments in its service, and give a direction to his whole personality. Teaching can be inspirational because it is a personal relationship. The less personal the relationship between teacher and pupil is, the less is it worthy of the name of teaching.

Teaching will succeed best when this relationship, this interaction between the personality of the teacher and the pupil, is a creative one. By that I mean in simple words, that in true teaching the effect of the teacher on the child should be such that the child is encouraged to use his powers to the very best of his ability. For this to happen the relationship must be one of love and not one of fear. It is love that is creative, and true teaching therefore, as we have seen in dealing with the emotions, means a friendly relationship between teacher and child. In fact this is the foundation of all true teaching, whether it is imparting information, or helping children to learn, or inspiring them to effort and development. In the last resort teaching is a human relationship, and real teaching can be done only if there is a relationship of friendship between teacher and taught.

> A good teacher does not draw out; he gives out, and what he gives out is love. And by love I mean

> approval, or if you like friendliness, good nature. The good teacher not only understands the child; he approves of the child.[1]

Teaching in this aspect is largely a matter of suggestion. Suggestions are continually flowing from the personality and example of the teacher to his children. Both may be unconscious of this. The children certainly will be. But the ideals, the habits, the actions, the words of the teacher are all having their effect on his children, and often his real teaching goes on without his being aware of what is being done. 'The late President Eliot of Harvard once said, "The supreme value of a teacher lies not in the regular performance of routine duties, but in his power to lead and inspire his student through the influence of his own mental and moral personality and example".'[2]

Thus teaching is both a conscious and an unconscious process and the most effective part of it is quite often the part of which we are unconscious. It is unnecessary therefore to point out the heavy responsibility that lies upon teachers to see that the personal relationship which exists between themselves and their children, from which they cannot escape if they would, is a creative one, or, in other words, an inspirational, encouraging friendship.

Teaching, as we have seen when considering the matter of adjustment, is something which helps the child to prepare for life after school days are over. School is an environment tempered to the child and graded so that when he leaves he is prepared to face the world and its problems. If the teaching in the school has been guided by true ideals, and if right methods have been used, the child will have been given information which will be of use to him in life. He will have been trained in using his knowledge, and the tools of knowledge. He will have been taught how to use his intellect and to think and work for himself. He will have been trained to rely on himself and to face difficulties with courage and determination. His character will have developed so that he possesses good habits, which will stand him in good stead in his life in the world. His sentiments will be worthy ones, centering round worthy objects. His whole development will have been such that he will be able to make the most of all his powers and all his opportunities, and his whole life will be lived under the guidance of a worthy ideal. In accomplishing all this the teacher is preparing the pupil for life; and thus one important aspect of teaching is that it is a means of preparation. This does not mean to say that teaching should be determined by the fact that it is a means of preparation. The best preparation of the future is to live well and truly the life of the present. The boy of 12 is best preparing for the future when he is living well the life a boy of 12 ought to live. But here again teaching is a means of preparation, and in helping the boy to live fully his life at any particular stage, it is also helping him to prepare for the future. Thus teaching will always have this preparational side to it.

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[1] A. S. Neill, *The Problem Teacher* (Herbert Jenkins, 1940), p. 11.

[2] N. L. Bossing, *Progressive Methods of Teaching in Secondary Schools* (Harrap, 1936), pp. 45-6.

To sum up, teaching is a relationship which helps the child to develop all his powers. Through teaching he gets information, he learns to work and to do things. He is helped to learn for himself. He is inspired to use all his powers so that he may make true adjustments, and prepare himself for what lies ahead of him. When a child has had good teaching he leaves school with a harmoniously developed personality, he is self-reliant, he has worthy interests, he is ready to take a creative part in the life of society, he has a courageous and creative attitude towards life and its problems. As far as has been possible he has been equipped with knowledge and with ability to use his knowledge. He has been given a desire for more knowledge, and a desire to use all his powers in living a worthy life under the guidance of a great ideal.

CHAPTER III

PRINCIPLES OF TEACHING METHOD

General Principles

Having considered the nature of teaching we must now try to see what principles should guide us when we actually start to teach, that is, the principles that should underline our methods, and also try to see how these may be practically applied.

In seeking to understand the general principles that should be the foundation of methods we use, we must always keep in mind what we have learned about the nature of the child. This knowledge will be our chief guide in framing methods.

Now one of the most important facts about children, which we have to remember throughout our teaching work, is that children are naturally active. What we call our instinctive tendencies, are ways in which this general urge to activity expresses itself. The chief characteristic of the life of children is activity, mental and physical. Thus our first general principle of teaching method is the *principle of activity.*

The ultimate aim of our work is that the child may learn to live and to do. And he learns by doing. Knowledge only becomes his as he uses it, gives expression to it in some way or other, and so makes it a real part of his life and experience. Hence this principle of activity on the part of the pupil is of the first importance in all teaching. This does not mean that the pupil will be active in every lesson, though he should be so in most, but it means that every lesson of every kind must lead to activity, if it does not involve activity itself.

Now life is a continuous experience. Everything we do is linked up with what has gone before and with what comes afterwards. The child's experience begins long before he comes to school, and goes on out of school in other spheres of life while he is at school. He is already being active mentally and physically. When we wish him to have a new experience therefore, it is impossible to think or to act as if we had before us an empty box into which we could pack information without any relation to any other information which the child may have. All information which is really assimilated has been taken up through activity. That activity is continually going on. If we wish our new information to become a real part of the child's life we have to get it linked up with the child's activity. This means that we have to link it with his past experience. This is our second principle of method. Whenever we teach we must link up what we are trying to give whether it be information or skill or appreciation, with the past experience of the child. We must connect up the new with the old. Then the new will take its place in the stream of the activity, that is, the life of the child. *To teach we must use experience already gained as a starting-point for our work.*

Now the past experience of the child has been gained through the functioning of his instincts. The instinctive tendencies have led to action. The child enjoys acting along the lines of these instincts. He is interested in what gives him the chance to use these instinctive powers. His purposes are desires to act in various ways dictated by his different instinctive tendencies. Thus when we link up with the child's past activities we are at the same time linking up with his interests. This is why it is important to link up our new information or skill with a past *experience,* that is, with some form of past *activity,* mental or physical. It is not of much value simply to link up with some theoretical knowledge that the child has been given in the past, but which has not resulted in a real vital experience. By a real experience I mean some actual activity of the child.

For example, a child may have heard about the sea, and may have a theoretical knowledge of it. But he has never seen it. It is then difficult to link on to that purely theoretical knowledge, further knowledge about sailing a boat or deep sea fishing. He may have some dim vague idea, but nothing worthwhile or real. If however the child has seen the sea, has been in it and on it, then our linking up is a really vital thing. It may not always be possible to link what we want to teach with an active experience, especially as so much of our school work at present is not characterized by children's activity as it ought to be. But in so far as it is possible this should be our aim. *We should link what we wish to teach with the real life of the child.*

If we do this then we will carry out the third principle of method which is that *we should rouse interest.* If our teaching is linked to the active life of the child, that is to the instinctive activity in the life of the child, using the word instinctive in its broad psychological sense, then we automatically rouse interest. The child is interested in what furthers his instinctive activities. For example, a child is interested in finding out things because of the action of his instinct of curiosity. He is interested in competing because of the working of his instinct of pugnacity. He is also interested in what will help him to conquer difficulties in the way of achieving a purpose, again because of the working of the instinct of pugnacity. Thus by linking our work to purposes and activities we rouse interest. This interest will be reinforced as we go along, if the activity principle is observed also. This is not to say that it is possible to secure an intrinsic interest in all school work. A great deal of drill work, of grind, must be done. But if this is connected with the carrying out of a purpose, and with work which satisfies the instinctive desire for activity in its various forms, then even the drill work and the grind will be undertaken and carried through cheerfully in view of the larger interest.

The fourth principle of teaching method which I wish to suggest is that there should be *a definite aim* for every lesson. This may perhaps seem a very ordinary thing to point out. But we find that many teachers get into the habit of taking a lesson without paying any attention to the aim, particular or general, that they have before them, while the children are quite in the dark about it. It will clarify our teaching, and make it much more definite, and therefore much more interesting and effective, if we make clear to ourselves the aim of the lesson. It is necessary for us to be definite about the aim of a lesson, as on our aim will depend our detailed procedure as we go along. If our aim is to teach appreciation of a poem we will conduct the lesson in a very different way from that in which we will conduct it if our aim is to teach skill in reading poetry. Then too, the children should know the aim of the lesson. It is a great help to know what we are trying to do, and adds greatly to our interest in what is going on. Children feel the same way about this as we do. They like to have something definite before them.

Dependent on our aim will be the material that we select for our lesson. This is the next principle, *the principle of selection.* When a teacher is preparing to teach a subject he has to select what he is going to use in his lesson very carefully. He cannot teach everything about Babar in a history lesson on Babar. He has to select what he judges is needed for his class. He cannot deal with every new word or idiom that comes in a reader lesson. He has to select those to which he will pay special attention. This principle of selection is a most important one, and on the teacher's ability to select well will depend a great deal of his success in his work.

After selection comes the *principle of division.* The teacher's presentation of his lesson must be in steps. This applies to any kind of lesson. The teacher must have in his own mind, and in his lesson notebook, very definite divisions of his material. He should present his material in definite stages or steps. Naturally, if this is done, it becomes very much easier for his pupils to follow him. One division or step leads on to another, and this makes it easy for the class to follow. If the teacher does not divide up his material in this way his presentation is liable to become indefinite, mixed and confused, and his class will likewise be confused. There must be a clear logical order as he proceeds through his presentation. At the conclusion of each stage, also if felt necessary, there can be a summary of the stage.

Everything that is done should be part of a whole and this involves the *principle of correlation.* We do not want the knowledge or experience of our pupils to be divided up into watertight compartments, one for history, one for mathematics, one for geography and so on. In every lesson in every subject the teacher must endeavour to link up what is being done and learned with other knowledge. It is not possible to lay down definite rules of ways in which this shall be done. The teacher will take advantage of such opportunities as arise. But he should always be on the lookout for chances to emphasize links and connexions with other subjects. This is much easier with some subjects than with others. The mother-tongue comes into every lesson in every subject, with the exception of some lessons in foreign languages. History and geography are easily correlated, as are science and mathematics. Where Basic Education is followed, the central or core subject and craft forms a correlating agency which connects up all subjects. The project method also makes correlation easy. But in all teaching an attempt must be made so to present material that pupils will understand it to be part of a whole and not an isolated unit connected with nothing else.

This leads us to the seventh principle which is that of *practice* or *revision*. If the lesson is one where a skill is being taught, as we shall see, practice forms a major part of the lesson. If it is a lesson where new knowledge is presented, then revision is essential either at the end of stages or at the end of the lesson or at both. Repetition is essential in teaching children, and practice and revision are very necessary. Young teachers and older ones too, are sometimes inclined to think that when they have 'done' some particular subject or part of a subject, it is finished with, and nothing more remains to be done. But the trouble is that without a great deal of practice and revision it is not really assimilated, it is forgotten and a lot of the work done in the first instance is wasted, simply because revision and practice were neglected.

These then are the general principles of method which we have to keep in mind whenever we teach.

1. The principle of activity.
2. The principle of linking with life.
3. The principle of interest.
4. The principle of a definite aim.
5. The principle of selection.
6. The principle of division.
7. The principle of correlation.
8. The principle of revision and practice.

APPLICATION OF PRINCIPLES

Let us now see how we can apply these principles when giving lessons.

There are three main kinds of lesson. The first we may call the lesson given for the acquirement of knowledge, the second the lesson for the acquirement of skill, the third the lesson for the development of appreciation. As examples of the first we have a history lesson in the primary school, the lesson where a new rule in arithmetic is being taught, certain geography lessons where information is given. As examples of the second we have lessons where the mechanics of reading or writing are taught, a geography lesson on map-drawing, lessons on drawing and handwork, lessons in which a foreign language is being taught. As examples of the third we have lessons where poetry is presented to children without particular attention being paid to meanings or the mechanics of the poem in question. The same type of lesson can be given with prose. These lessons come chiefly in literature, drawing, and music. Each of these different types of lesson has its own technique.

1. ACQUISITION OF KNOWLEDGE.—*Preparation.* In seeking

to enable our children to acquire knowledge, the first thing we have to do is to prepare them to receive it. This is necessary both for the children and for the teacher. It is necessary for the teacher to have as accurate an idea as possible of what the children already know, and it is necessary for him to rouse the interest of the children, to make them keen to acquire the new knowledge which he wishes them to get. This means that there must be co-operation between class and teacher if the lesson is to be a really successful one. This process of the teacher finding out what the children know, and the children realizing what they do not know, and coming to a desire to increase their knowledge is called 'preparation'.

We have seen that one of the principles according to which we are to work is that of linking up knowledge with life. If the teacher is to do this he must have some idea of what the children know, and of what they have done. That is, he must know as much as possible about the previous experience of his children. One of the difficulties in class teaching is that this previous experience will be different in the case of every child. However, in class teaching we have to try to strike an average, however faulty such procedure may be from the point of view of a sound psychology, and the teacher will have to find out the more or less general previous experience of his class.

It is important to find out this experience and knowledge, because unless the teacher knows this, his lesson is apt to be up in the air. The minds of his children will not be able actively to associate it with anything in their lives. The minds of children are active, as we must always remember, and children naturally like to connect things with what they have already experienced. This is obvious if we think of trying to get children to use words or idioms of which they have never heard, and which they have never seen before. Thus the first step in teaching a lesson of this type is to find out what the previous knowledge and experience of the child is. From the teacher's side this enables him to link up his lesson with life. From the children's side it enables them to understand a lack in their lives. As the teacher questions them and brings before them what they already know, it will become apparent that there is a gap, or that there is something useful that they do not know. The lesson is to supply this deficiency. If the teacher is skilful he will use this step of preparation to bring his children into partnership with him. He will be able to give them a reason for what he is going to do, and in many cases will be able to enlist their sympathy and desires. The more he can do this, and can bring the purposes of his pupils to bear on the subject in hand, the more successful he will be.

For instance, if pupils happen to be running a school or a class shop, it will not be difficult to find opportunities for making them realize the need for knowledge of certain rules in arithmetic which up to that time they have not learned. The teacher thus enlists their purposes. If the boys are wanting to put on a play, this can be used to make them realize the necessity for certain lessons in the mother-tongue. Again by using the past experience of the children, and bringing home to them a lack in that experience, which is handicapping them, the teacher is able to get their co-operation and, needless to say, their interest.

This cannot be done to the same extent in every lesson. Some situations and some lessons lend themselves to this harnessing of purpose much better than others. But there must always be preparation of this sort in order, at least, to know where to start, and how to link up with life.

Perhaps a word of warning should be given here. This step of preparation need not be an elaborate one in every lesson. Where a lesson is one of a series a question or two will often be enough. In any case the teacher should aim at getting on with his new material quickly. Necessary as it is to get the minds of the children working so that they have in the forefront of their thinking at the moment, that with which we wish to link the new information, it is also necessary not to bore them by trying to prepare to link up everything in our lesson with something that has gone before. Such an elaborate procedure is quite unnecessary, and we must avoid the risk of killing interest when we want to rouse it.

> Let the teacher then . . . as briefly and concisely as possible pick up the thread of knowledge, and get the pupils into the line of thought which leads from their present acquirements to the new end. The better the teacher knows his class, the more accurately and quickly he can do this. When the class is strange to him, he may be aided by the experience of the previous teacher, but in no case can his start be as sure or as sharp as when he is teaching pupils he knows. . . . It is this determination of the starting-point, this power of putting oneself in the mental place and attitude of the pupils that marks off the true artist in teaching from the mere mechanical grinder of facts and formulae. To know where the pupils are and where they should try to be, are the two first essentials of good teaching.[1]

Statement of Aim. After preparation, the next step is the statement of aim. It is necessary of course, for the teacher to know his aim. But it is equally necessary for the pupil to know the aim of the lesson. If the preparation has been well done, the aim will emerge almost automatically. But whether this be the case or not, the aim should be definitely stated, so that pupils know exactly what they are going to try to do and can see where they are going. Children like things to be definite, and it will certainly tend to kill interest if the pupils do not know what the teacher is trying to do, or why they themselves are doing what he is trying to get them to do. Even small children can follow an orderly advance to an aim set before them. Let the aim be clearly stated then.

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[1] J. Welton, *Principles and Methods of Teaching* (University Tutorial Press, 1929), pp. 56-7.

The way in which this is done will vary with circumstances. In a series of lessons on a reader it is a simple matter, and the children, after they have begun the reader, know the general aim as well as the teacher does. But in nearly every lesson in such a series, there will be special subsidiary aims to which the teacher should draw attention. In a lesson on arithmetic the aim may be simply to give practice with a rule previously learnt. But the pupils should understand this. We can lay it down as a rule that pupils should have a clear idea of what they are going to do. Even when a method such as the heuristic method is being used, where the children are being helped to find out something for themselves, without being told the rule or principle for which they are searching, they should know that it is a search for a rule or principle that they are engaged on. In an appreciation lesson they need not be told what they are expected to find in a poem or a picture, but they can be told that they are going to find out what they think about the poem or picture in question. When we give the children guidance in such cases, we do not lay down where they are to arrive. We simply tell them that we are going on a voyage of discovery and that when we reach the end we shall see what we have learnt. It will be seen therefore that in some cases, the aim the teacher formulates for himself, and that which he puts before his pupils may not be exactly the same. The teacher will know where he wants to get to and will have a clear idea, down in writing, of what he is going to try to do. From the pupil's point of view it would spoil the interest, the educational value and the training if they knew exactly what they were to find. In doing a scientific experiment, pupils should not know what the results should be according to the book. They should know what they are trying to find, and why they are doing the experiment, and should then go ahead with it and see where they arrive.

Presentation or Development. The next step is what is called presentation. This simply means that the teacher gives or presents some new knowledge to the pupils. This term, presentation, is not a very good one as it suggests a passive reception of knowledge by the pupil, whereas we know that the mind of the pupil is active. By whatever name we call it (the word development has been suggested, which is probably better than presentation) it is a stage when new matter or new work is brought in, and actively assimilated by the pupil. There are numbers of times when the pupil has to be given new knowledge or inspired to find new knowledge for himself, and this stage, by whatever name we call it, is the third stage. What is done in this stage, and the methods used, will be determined by the aim of the lesson. This is the stage at which the particular type of teaching known as exposition is chiefly used.

In connexion with this stage of enabling the pupil to gain new knowledge, it is important to remember the principles of selection and division. It is at this stage that these principles come into play. The teacher must select wisely what he is to tell, and how much the pupils are to be expected to find out for themselves. Then he has to arrange his material in an orderly, clear manner, dividing it into its natural logical parts. Even if it is only telling a story to the first class these two principles must be remembered in the presentation of the story.

Generalization. The fourth step that we can distinguish is what is sometimes called formulation or generalization. When the mind assimilates knowledge it compares and contrasts it with what it already has. When a child sees a horse for the first time, having previously been acquainted with a dog, it calls the horse a big dog. In the same way we compare new things we learn or find out with what we already know. From such comparisons we form general ideas. Our minds like to systematize things, to have our knowledge arranged in an orderly way. Thus we make generalizations. A child sees that a ball thrown into the air comes down, that a stone comes down, that a brick comes down, and from these experiences he makes a general rule. In games this tendency is seen very clearly. Children have their rules for their games and are strict about keeping them. They like to be able to make rules.

It is often this step that provides the answer to a problem from which the lesson started. With this step the aim of the lesson is achieved. The pupil now stands on fresh ground, and he has something which he can use and put to the proof.

This step of formulation or generalization, although it does not by any means come into every lesson, is of great importance. It is naturally more applicable to what we call an inductive lesson.

> Yet this step of formulation is as important as the others, and time and opportunity should be provided for it. Memory has been so exalted in the preparation

> for examinations, that the far slower and more difficult process of thinking has been often omitted when a teacher is impatient to cover the ground. A child's thinking is liable to manifest errors; he is prone to jump to conclusions, to mistake analogy for proof, to argue from a particular instance, in short to commit all the fallacies of simple logic. To cure him of these faults is not easy, and requires much time and patience. So the teacher is inclined to avoid the struggle by thinking for the pupil, a method repeated later in the politician's catch phrases and the party newspaper dogmas.[1]

One point that must always be remembered in connexion with this step in teaching or this aspect of teaching is that the process of formulation or generalization must be done by the pupil, as far as possible. The skilful teacher is the one who can help the child to come to his own conclusions, based on his own experiences. It is bad teaching to give children ready-made general conclusions, 'concepts' as we call them in psychology, which are not founded on experiences of the child himself, on his own percepts. For example it is bad teaching to expect a child to learn that water boils at 100°C. at ordinary pressure if he has not first experimented himself and seen for himself that this is the case. It is also bad teaching for the teacher to allow the child to have a number of experiences and then tell him the generalization. The child, with the teacher's help and guidance, must be led to make his generalization for himself.

Application. The fifth step that we can take is application. This is most important. Knowledge is only knowledge, as we have seen, when it is used. In any case the results reached in previous stages of work have to be tested in actual practice. It may be that flaws will appear when a generalization is checked by being put into action. And in all cases knowledge gained must be used if it is to become permanent. The children must be given the chance to give expression to what they have learned, to be active and to make further progress. Our principle of activity, mental as well as physical, comes in here. Children learn a rule in arithmetic. They must be given the chance to do problems where this rule is used. They learn the geographical facts about a country or a place. They must have the chance to draw a map or make a diagram. They learn new phrases or idioms in the mother-tongue or English. They must have a chance to use those phrases and idioms. It is safe to say that this stage of practical work must come, if not into every lesson, at least into every series of lessons, and must form a big part of the work of the lesson or the series. In this step the knowledge of the pupils is stabilized, and made firm, and they are prepared to make further progress. In a very real sense this last step is a preparation for the next piece of learning.

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[1] F. Smith and A. S. Harrison, *Principles of Class Teaching* (Macmillian, 1937), p. 301.

These stages or steps that we have been considering come in what may be called an informative lesson, a lesson where the pupils are acquiring new knowledge. Even in such a lesson or series of lessons these steps may not all appear in any one particular lesson. Most lessons are part of a series, and we might have to look at the whole series to discover our five stages. Even then we do not have to follow them slavishly. Probably steps one and five will always be found in a good lesson or series of lessons, preparation (including motivation) and application. But these stages or steps must be our servants not our masters. They are for us to use according to circumstances which vary with classes, subjects and other things.

2. ACQUISITION OF SKILL.—There is a second type of learning, however, where we need to follow a different procedure. This is the lesson where the pupil is learning a skill, where the object of the lesson is to help him to do something, not simply to learn about something. For example, learning to read or to write are lessons where a skill is acquired. Drawing lessons are lessons of skill, so are lessons where map drawing is taught. All kinds of handwork are lessons of skill. In such lessons we have to vary our procedure.

Preparation. The first step will be the same as in the case of an informative lesson, that is preparation, including motivation. It is just as necessary in the case of teaching a skill as in seeking to impart knowledge, to get the child interested, and to link up with life. We must have something to build on.

> For our power of imitating the activity of another is strictly proportioned to our pre-existing power of performing the same general kind of action independently. . . . Imitation may develop and improve a power which already exists, but it cannot create it. Consider the child beginning for the first time to write in a copybook. He learns by imitation; but it is only because he has already some rudimentary ability to make such simple figures as pothooks that the imitative process can get a start. And when the start has thus been made the skill attained in today's lessons will form the basis of tomorrow's. In one sense the preparation for any new section of the subject-matter will, of course, be constituted by the whole course of the preceding instruction; but, more immediately, it will consist in a revision of the knowledge gained and a little practice in the skill acquired in the last few lessons.[1]

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[1] T. Raymont, *The Principles of Education* (Longmans Green, 1939), p. 253.

Statement of aim. The second step in a lesson for the acquirement of skill will be, as before, the statement of aim. The child must know what he is going to do, and the skilful handling of this stage of the teaching will ensure the interest and the co-operation of the pupil.

Presentation or Development. The third step is presentation. In the case of acquiring skill this stage consists largely of observation, listening and seeing on the part of the pupil, doing things with explanations of the best methods of doing them, by the teacher. Thus, if the class is learning to write they will watch the teacher writing a word, and the teacher will, besides writing, show them how the pen is to be held, how the strokes are to be made and so on. There may be a statement of rules.

Practice. Then the fourth step will be one of practice by the pupils where they imitate what the teacher has shown them, and what he has done.

Correction. This will be followed by a step that can be called correction. It is really a re-presentation. The teacher may again show how things are done. He will call attention to wrong methods, show right ways of doing things, show how to avoid mistakes and clumsy performance. There may be a re-statement of rules.

Practice. Then again will come practice, as the pupils again imitate and seek to improve technique. Thus these two steps may be repeated one after the other a number of times. We will be referring again to this type of work when we consider the process of learning.

There are certain things which must always be kept in mind when dealing with the acquirement of skill. The first is that the pupils must see some reason for the acquirement of the particular skill. This is a principle common to all lessons, that of motivation or statement of aim. Secondly the pupils must not be required to acquire a skill which is too difficult for them at the stage at which they are. Thirdly the standard of work in class should be such that by steady application a child can gradually approach to within a reasonable distance of moderate success in a reasonable time. It is particularly important in view of our principle of interest to remember all these three considerations. Pupils will quickly lose interest if the work is beyond them, and they find that they cannot do it. Then too children like to feel that they are making progress, and that they are achieving some success. This gives them the feeling of satisfaction that is necessary for successful learning.

3. DEVELOPMENT OF APPRECIATION.—A third type of lesson where we have a still different procedure is what is called the appreciation lesson.

> The appreciation lesson is an invitation to look at or to listen to something beautiful, with leisure to enjoy it in a favourable atmosphere, and with the teacher's use of suggestion to heighten its appeal. The results must be left to develop as they will.
>
> So far as young children are concerned the steps of preparation and presentation are enough. The mind can be prepared by the awakening of expectation and the anticipation of pleasure, and suggestion here plays an important part. The presentation must make use of every device which will assist the vividness of the appeal.[1]

In such lessons as these, as has been pointed out in the above quotation, use will be made of suggestion. With all pupils, and particularly with younger ones, suggestion, with its resultant imitation, will be a powerful factor in an appreciation lesson. For instance the teacher will try to use the physical environment to help him in creating a suitable atmosphere. It is not advisable to take a lesson on a poem on rain on a bright sunshiny day, or vice versa. Where in poetry or prose there are descriptions of nature, the class should be taken outside if possible. A poem on scenes of nature is much more likely to be appreciated if those reading it are seated outside among the trees and birds.

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[1] F. Smith and A. S. Harrison, *Principles of Class Teaching* (Macmillian, 1937), p. 366.

The teacher will also use suggestion in the way he reads. He will do his best, by his reading, to suggest to his hearers the feelings of the author. He will use the dramatic appeal to rouse feeling in those who listen. The emphasis he places, his enthusiasm, his whole attitude to his subject, will carry suggestions to his class. These suggestions will thus teach them real appreciation. This will be heightened when he comes to the stage explaining the reasons for his own appreciation of the subject-matter, and discusses it with his class.

An appreciation lesson should be a lesson conducted in the spirit of play, and therefore such lessons lend themselves to division into formal steps less than any other kind. But there are three fairly definite stages which we can differentiate; preparation, presentation and practice. And to this we might add the statement of the aim.

Preparation. In considering an appreciation lesson there are three things which the teacher must keep in mind.

1. The teacher must himself appreciate what he is trying to lead his pupils to appreciate. If he cannot do so, then he should leave it alone.

2. He must do his best to create an atmosphere for his lesson; that is, he must, as we have just seen, use the power of suggestion as much as possible. Pictures can be used to create an atmosphere in the room. Outside things should be controlled as far as possible so that no interruptions take place during the lesson,

3. The teacher should have some insight into the possibilities of his pupils so that he may know what they are likely to appreciate. In this lesson, as with others, we must link with life. To do this we must start from the stage of appreciation at which our pupils are, however elementary and crude it may be. The teacher must cater for all tastes in an effort to raise all tastes.

In preparing for an appreciation lesson, difficulties that are likely to be met with in understanding words, allusions, figures of speech and so on should be dealt with in previous lessons as far as possible. It is fatal to try to mix explanations of such things and appreciation, in one lesson. It is equally fatal to try to teach appreciation when pupils do not understand a great deal of the subject-matter. Preparation for the actual appreciation lesson may take some time, but thorough preparation pays.

Presentation. As far as lies in the power of the teacher, this must be a work of art. The teacher must do his best to put himself into the author's place, where the lesson is on prose or poetry. He must try to bring out the author's thoughts and feelings.

There should be no breaks or interruptions in the presentation. The poem or passage will be a unity and must be presented as such.

After the actual presentation of the passage, poem, picture, piece of music or other object of appreciation is finished, the next step is what we may call guidance. It may be looked on as a separate step, but is really part of presentation. If the atmosphere in the class is good, pupils will be ready to comment on, or to discuss what has been presented by the teacher. The teacher can use this opportunity to explain why he himself appreciates the material under consideration. He can discuss with pupils their own reactions to it. He can get pupils to express their preferences and their likes and dislikes. In this way he can guide them to a better understanding and a better and more discriminating appreciation. During this portion of the lesson pupils will have opportunities for telling which particular parts of the material appealed most to them. If it is music or literature, appealing passages may be done again. The material can be compared with other material previously considered and studied.

In this type of discussion work, the teacher must be careful not to force things. If certain pupils are diffident about expressing themselves they should not be forced to give their opinions or to indicate their preferences. They will learn to do so gradually, especially if the teacher is sympathetic. The teacher must, above all do his best to help his pupils to be sincere. He should never do anything which will train them to say they like things or dislike things, because they think that that is what the teacher is expecting them to say, or because that is what they think they ought to feel. It is far better for them to say frankly that they do not see anything special in what has been presented, than for them to pretend to have an appreciation they do not really feel. A forced appreciation, training pupils in insincerity as it does, is most harmful.

> Enjoyment is subjective and will not occur in obedience to a command from the teacher. It is necessary to 'feel' the mood of the pupils and refrain from attempting by artificial teaching-devices to elicit expressions of opinion about non-existent enjoyment. Forced protection of the æsthetic discussion soon becomes tiresome and defeats the purpose of the appreciation lesson. Moreover, some pupils are shy of expressing their feelings in public. Because a given pupil does not give vent to opinions it does not follow that there has been no appreciation. Appreciation is

> like a tender plant. It needs careful, sympathetic cultivation rather than forcing.[1]

With older pupils, when the work of emotional and æsthetic guidance has been finished, the teacher may take up the intellectual side of the work. He can discuss with his class the technique of the author, musician or artist, explaining for instance, how an author by his use of certain words and figures of speech gets the effect that he wishes to produce. If necessary, meanings and allusions can again be dealt with. This type of work will be preparation for the next stage, that of practice.

With younger pupils (and with older ones also) when the work of guidance is finished, the teacher can give another rendering (in literature and music). This can be followed by attempts by pupils to give appreciative renderings of the passages under consideration.

Practice. Pupils can learn to appreciate good poetry or prose or pictures, by their own efforts to write or draw or paint. The attempt to acquire skill is a sure way to heighten and refine appreciation. The more we know about the technique of a subject, the more we can appreciate the work of others. With young children this can be done to a limited extent only, but something can be done. The extent to which practice can be carried out will also depend on the ability of the individual. Some will have ability along one line, and others along another. Wherever possible, however, the teacher should encourage pupils to exercise their creative abilities, and especially to write, draw, paint, sing and play for themselves. He should try always to satisfy the child's desire to do things for himself. However crude the child's efforts may be, they will be of great educational value, and will help materially in developing good appreciation. Such efforts by pupils should be followed by further instruction and guidance. As pupils develop skill along any line, an increasing amount of practice in creative work can be undertaken.

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[1] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941), p. 349.

RECAPITULATION

In all work recapitulation or revision is essential. A distinction is sometimes drawn between recapitulation and revision. Recapitulation is taken to mean going over ground already covered in order to ensure more complete understanding, while revision is confined to memory work. Essentially, however, the object and process are the same. Different types of subject-matter require different treatment.

Recapitulation will be used at three different stages. It is often necessary to recapitulate at the end of each stage in a lesson. Recapitulation should always come at the end of a lesson. It should also come at the end of a series of lessons which form a unit. Time should always be given in arranging a syllabus for frequent recapitulation lessons.

Whenever it comes recapitulation has three objects.

1. To enable the teacher to satisfy himself that what has been done has been properly understood.

2. To summarize and to bring once more to the attention of the pupils the salient points of what has been done. That is, it is an aid to memory. Here recapitulation is a kind of consolidation, preparatory to further advance. In subjects where there is a great deal of memory work, as in the early stages of learning English, a great deal of this sort of recapitulation must be done.

3. To enable pupils to see what has been done as a whole, and so to understand how different facts and details fit

into place in that whole. For instance, in a course of history lessons on the life of any historical character, recapitulation will enable the pupils to see more clearly than is possible as the lessons are proceeding, the principles that guided the life and policies of the character in question, and the effect of his life on his time and society. In this way recapitulation will often enable pupils to correct erroneous ideas, and to fill in gaps in their previous knowledge. They are also enabled to grasp the significant elements in what they have learned. They have been among the trees. Now they can view the wood as a whole.

The methods used in recapitulation will vary with the object for which it is being used. When the teacher wants to find out how much information has been assimilated, as in the case of a rule in arithmetic, his recapitulation will consist largely of practice, preceded by a brief presentation, followed by presentation again if necessary. Question and answer may be employed to cover the work which is to be recapitulated, followed by a recapitulatory exposition if necessary. Pupils may be asked to make summaries themselves. Maps, diagrams, drawings, charts, or models may be made. With younger children wherever possible, and with older children almost always, these should be done by the children themselves, after a brief explanation or exposition has been given by the teacher. Occasionally the teacher will do such things himself so that they can be copied by pupils. As we go up the school, the amount done by the teacher will decrease, and the amount done by the pupils will increase. In literature, dramatics form a very good method of recapitulation.

Where the third object is before the teacher, the lesson will be an informative one. In his presentation the teacher will try to carry out his object of helping his pupils to arrive at a view of the whole and to see how the details fit in.

To sum up what we have been considering about the different stages in different kinds of lessons, I will quote some wise remarks from *The Principles of Education* by T. Raymont.

> The young teacher cannot be too earnestly warned that for him the great thing is to appropriate the 'spirit' of the formal steps of the teaching process without becoming enslaved to their 'letter'. And how much does this mean? It means that, though all the steps are not necessarily gone through in the treatment of any one section or unit of teaching, yet the *order* in which the steps occur cannot be departed from without disadvantage. That the acquisition of knowledge or of skill is a process of assimilation of new to old, that the relevant parts of the pupil's previously acquired stock of ideas should therefore first be recalled, that there should be a progress from the concrete and particular to the abstract and general, that ideas must be possessed before they can be applied, and that application in its turn makes for effective and permanent possession, these are truths as the law of gravitation because they embody the plain facts of the working of a child's mind. . . . Like the rules of any other art however, the rules of the teaching art will not always be overtly employed. As soon as the teacher has thoroughly imbibed their spirit he may be left quite free to dispense with a formal array of preparation, presentation and the rest. But though the steps may no longer be explicitly stated, or even thought of, they will always remain implicit in his best efforts, and he will be wise enough not to despise them because he has learnt to practice his art without conscious need of their help.

MAXIMS OF METHOD

1. *Proceed from the known to the unknown.*—This is simply another way of saying that we must link up our

work in school with the life and experience of our pupils. We must not think that we can give our lessons in a vacuum as it were. We must start from something that the child knows. It may be known only vaguely and will become clearer and more definite as the lesson goes on. New knowledge expands, and fills out the old. But from the point of view of interest and integration of knowledge our starting-point must be with something known. This maxim stands for what we seek to do in every lesson, namely, to form a link between old and new. For example, a history lesson on Ram Chander will start from the celebration of the Ram Lila; a geography lesson on products with the things the children wear and eat. We must arrange our subject-matter and our lesson so that each part is properly connected with what has gone before. It does not mean that all teaching must be of this nature. Lessons, as we have seen, vary in type and object. But it is a guide to tell us how to start out on a lesson or on a series.

2. *Proceed from concrete to abstract.*—This is a way of putting the common-sense fact that small children learn first from things they can handle and see. They do not think in abstractions, but concretely. A small child has not at first a general concept of a dog. He knows a particular live dog and his knowledge of dogs advances as he comes in contact with more and more live and particular dogs, until he is able to form a general idea of 'dog' or, as we say, has an abstract conception of a dog. This maxim means that particular instances and examples must precede the formation of general rules. It applies particularly to that type of lesson called an inductive lesson which we shall consider later. We must remember however that the first word in the maxim is 'proceed'. We must not allow our pupils to remain concerned with the

concrete and never proceed to the abstract. A small child uses concrete objects in its efforts at arithmetic but, as soon as they can be dispensed with, they should be allowed to go. Then, too, this maxim deals with only one aspect of the work, with one step in the lesson. The child forms a generalization from a number of concrete instances but it then tests that generalization by applying it. That is, this maxim applies to only one stage of the whole process.

3. *Proceed from the particular to the general.*—This is simply another way of expressing the same idea that we have considered above, under proceeding from the concrete to the abstract. Particular instances are concrete. Generalizations are abstract. It is simply the inductive method of progress and reasoning.

4. *Proceed from the easy to the more difficult.*—This again is ordinary common sense. Our work and our lessons must be graded to suit the standard of our pupils. We will naturally gradually increase the difficulty of what we do as we find our pupils can do it.

At the same time this maxim has to be used in relation to the psychological position. Sometimes the easy is not always what appears to be easy from a logical point of view. We might think that it is easy to remember words that are similar, such as cat, rat, mat. But we know that children find it easier to remember words that are quite different from one another. Similarly the best way to start reading is not from letters or words, though from a logical point of view this might seem to be the easy way. The best way is to start with sentences. Thus in determining what is easy we have to take into account the psychological make-up of the child, and not close our eyes to everything save the logical. What seems easy, logically, to us, may not be really easy for the child. We should always use the psychological in preference to the logical method of approach.

We have also to take into account the interest of the child. A child may have no interest in drawing if we start him drawing what are doubtless 'easy' lines and curves. He wants to try to draw an animal. It is certainly more difficult, but it is interesting, and hence he will make more progress than if we try to make him do things in the logical way.

5. *Proceed from simple to complex.*—This is only true if we remember that when we talk of 'simple' we mean 'simple' from the point of view of the child. A child has an experience of some concrete object. He does not analyse the idea he has of this object. It is for him a simple thing. As he learns more about it by the process of induction and then deduction, he finds that it is more complex and so he proceeds. A ball is just a ball to a child. Later he learns of its properties and why it acts as it does. The child starts with a sentence in learning to read and later comes to words and letters. The sentence is, for him, simple. This is the only meaning we can give this maxim apart from the meaning already given in proceeding from easy to difficult. From a psychological point of view this maxim is often misleading in the same way as the previous maxim is misleading.

> A child's apprehension of objects is 'simple' because he has not by analysis discovered their complexity. When he has found many 'abstracts' in a 'concrete', and again built up the concrete by putting together those abstracts, his idea has become complex. (As we have seen in the case of the ball.) But the object remained the same all along. It is not therefore surprising that the application of this maxim to the arrangement of the subject-matter of instruction has led to some of the worst methods of teaching the

> world has ever seen, as for example, to the beginning of a foreign language by a minute and ordered study of the grammar, with copious exercises on every point . . . to the 'alphabetic' system of teaching to read; to the teaching of drawing by elaborate and long-continued exercises on straight lines, then combinations of straight lines and so on to more 'complex' figures on the ground that the line is the 'simplest' element of form. So it is in the sense that it is the ultimate result of the analysis of form. *But as the child does not naturally make this analysis* its results are not 'simplest' to him in the sense of being most easily apprehended.[1]

These maxims, like the formal steps, are meant to be our servants and not our masters. They are not to be slavishly followed on every occasion in every lesson. They are simply guides that will help us very often. They will be followed chiefly when the lesson is one where knowledge is to be acquired, an informative lesson. But even there we must use our judgement. Our guides are the general principles that were laid down at the beginning of this chapter. If we find that following these maxims will help us to carry out those principles or any of them, then we can use them, otherwise not.

In fact, our use of these maxims and of the formal steps should be guided by one thing; that is, the nature and mind of the child. We must teach in such a way that we work *with* the child and not according to our own ways of thinking. We have to try to understand how things appeal to a child and adopt methods accordingly. As we have seen, it fits in better with child nature to start off trying to draw a whole animal rather than by learning to draw curves or lines first. So we do not hesitate to depart from our maxim in such a case. We have to look at the work from the child's point of view, understand how he approaches it, and forget our own logical ideas on the subject.

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[1] J. Welton, *Principles and Methods of Teaching* (University Tutorial Press, 1929), pp. 64-5.

6. *Logical* v. *psychological.*—It is well for us to understand the difference between what is called the psychological and the logical approach. The logical approach is concerned more with the subject-matter and its arrangement into logical order and steps. The psychological approach is concerned with the child and his reaction and interests and ways of looking at the subject. We can see that there is thus a radical difference in view-point here.

We have already seen, in considering the maxims of method, that the logical is to be discarded in favour of the psychological. When we treat a subject logically we are usually thinking of it from our own point of view rather than from that of the child. We have gained our knowledge of it, and have become able to distinguish the various parts and sections of it and their relationships (analysis) and are able to divide it up into its elements. So we think that naturally we should start with these elements, not realizing that we got to them after a long process. If we take things from the child's point of view we will begin with experiences, which are not logically distinguished elements, but are wholes which are complex and made up of a number of parts organically united. Thus for a child the unit is the sentence, not the word or the letter, as it is for the adult. Hence we start reading by teaching the child to read a whole sentence. This is the psychological approach. The animal, to take our previous example, is the whole, the experience that the child has, so he starts to draw the animal. The child does not have the experience of a curve or a line. Hence we start him drawing a whole animal. This is the psychological approach.

We use logical procedure rather in the middle of a lesson than in framing our approach. When we are presenting information, as we saw, it should be arranged clearly and each point should follow on logically from the one before. Thus in telling a story our story must proceed clearly and logically. But logic will not help us to find out what story to tell. Our psychological approach tells us that. Thus logic will always have a place in the matter of presentation in our lessons. We must not have our presentation confused. But *what* we are going to present and the point of departure will be determined by psychology and not by logic.

7. *Induction and deduction.*—The logical method of presentation gives rise to two distinct types of lesson of the informative type when knowledge is acquired. The first is called the inductive lesson. In the inductive lesson the pupil observes, or has his direction drawn to a number of particular instances, and then on the basis of those particular instances he forms a general rule. We have already seen this in discussing the step of generalization. (This step is usually an exercise in inductive logic.) Thus when a child in reading finds that a certain verb is followed by the preposition 'from' and finds several instances of this, he then frames a rule for himself, that this verb is always followed by 'from'. A child finds that a piece of wood floats when put in water. He finds that the next piece he puts in water also floats, and so on. He then comes to the general rule that wood floats. As we can see, this is the best method to be used when we wish to train children to think for themselves. They must, of course, be trained also to observe. But the inductive method is the best method of training children to think for themselves. But they must be allowed and encouraged to carry out the process themselves. If their conclusions are found for

them or suggested to them then the method is of no value.

But when a rule of generalization has been arrived at, then it must be tested. This process is called deduction. When the general rule is given, and is applied to particular cases, then we reason deductively. 'All men laugh. A is a man. Therefore A laughs' is a sample of deductive reasoning. The general rule 'All men laugh' is applied to A, and we can then make our conclusion that A laughs.

It will be seen then that deduction must follow induction. It is not sufficient to lead children to arrive at general conclusions from particular experiences, but they must go on further and apply those general rules in order to increase their knowledge and in order to test the rules. This, as we have seen, is often done in the step called application. Suppose that in the example we took of a verb followed by the preposition 'from' the child applies the rule every time he uses the verb. He may then be said to know how to use this verb. This of course is what grammar is. It is the collection of rules which have been built up from innumerable particular instances, and then we have those rules to use. The child may find also that sometimes his verb is not followed by 'from'. Here is an exception to his rule. He has applied his rule, but in one exceptional case it does not work. Here again his knowledge is increased, and he now has his general rule, but with it, an exception. If he finds numerous exceptions he may have to change his rule.

Thus we have two distinct types of lesson; one founded on the inductive process and the other on the deductive process. We may of course use both processes in the course of the same lesson. We will certainly use both in the course of a series. But one must be followed by the other. There is, in fact, a continual process of inductive and deductive reasoning going on, and each process helps us to increase our knowledge. It is like the interaction of instruction and practice in a lesson for the acquirement of skill.

MOTIVATION

It is advisable, in view of the importance of the subject, to bring together briefly what we have observed in different places, in connexion with motivation and interest.

We have seen the importance of the principle of activity in teaching. It is natural for children to be active in one way or another. Human beings all have a strong urge to activity; at any rate, when they are young. As long as we give our pupils the chance to be active, physically and mentally, if they are normal and in good health they will be interested. The general urge to activity shows itself along different lines or channels which we call instinctive tendencies. Successful motivation depends on the successful use of these natural powers and tendencies to action. When these are in action and a purpose is being followed out, much of what would otherwise be drudgery, is cheerfully undertaken.

For example, we encourage our pupils to ask questions and to explore and to find out things for themselves. We find that when they are doing so they are interested. The reason is that we have given opportunity for the instinctive tendency to be curious to function. We use competition either among groups or by matching individual pupils against their own records. Again we find keen interest. The reason is that the instinctive tendency to be pugnacious is being used. We find pupils taking increased interest in their work when they are praised or when they find themselves excelling others. The reason is that the instinctive tendency to to self-assertive is being given opportunity to function. We find children interested in doing things in groups, in working together, because we are using the herd instinct. We encourage pupils to make things, to draw their own pictures, to write their own stories, to compose their own poems, to run their own magazines, and find many of them intensely interested in their work as a result. The instinctive tendency to create has been given an opportunity to be active.

Thus we find that whenever we can use the various powers and urges to activity, we solve the problem of motivation. The most successful methods are those which give scope to the urge to activity.

This explains the success of methods such as the play-way, the project method (which is a type of play-way) the Dalton Plan, the heuristic methods. When we analyse these methods we find that they all bring into play instinctive tendencies to activity of various kinds, and give scope for activity along the lines of the child's natural urges to activity, mental and physical.

Obviously it is not always possible to make use of these fundamental impulses. The pupil has not the wisdom always to choose the activity which are most beneficial to him in his development. He cannot be left always to act just as the urge to activities directs him. And while it is always true that the more we can utilize such urges, the more successful will our work be, at times we have to take other measures.

In securing good motivation and interest, a great deal depends on the teacher's own interest in the work that is being done. If the teacher is not interested in what he is teaching, he can scarcely blame his pupils if they are not interested either. But, it is objected, how can one expect a teacher to keep up his interest when he teaches the same thing year after year? There are two answers to this. One is that although the subject-matter is more or less the same, the pupils are not. If the teacher is interested in *his pupils,* he will not have much difficulty in keeping up his interest in his work year after year. The second is that if the teacher develops an enthusiasm for experiments in methods of teaching, he will have no difficulty in keeping up his interest in his work from year to year. But we cannot get away from the fact that if the teacher wishes his class, whether it be first class or tenth class, to be interested in the work that is being done, he must be interested himself. His own interest is reflected in his class. And if he is interested in teaching method and in experimenting in method, he will find a still better response from his class.

The teacher can do a great deal to keep up interest by varying his methods of teaching and his way of presentation. The more variety he can bring into the work, the greater will be the interest of his pupils, even in work which is intrinsically uninteresting. For instance a judicious use of pictures, maps, diagrams, charts, and blackboard work can be of great use.

The teacher should try to have a striking introduction to his lesson. A judicious use of problems which have to be solved, especially if, at the beginning of the lesson, the class is given the problem which is to be solved, as a key or guide to the lesson, will help to stimulate and sustain interest. For instance, in a history lesson on Akbar, the problem might be to discover why Akbar is called great. Reference will be made every now and then to the problem as the lesson or series of lessons proceeds, with emphasis, as the lesson proceeds, on various points leading to a solution of the problem. As we have seen, children should be told the aim of the lesson. If that aim is the solution of a problem, the lesson becomes more interesting.

With older pupils the teacher should try to arrange his subject-matter so that it develops, that is, so that each topic arises out of a previous one.

> Thus, by carefully articulating the syllabus and bringing out the connexion as vividly as possible, the material can be made into a medium for *continuous exploration*, and each topic becomes an introduction for the next. By emphasizing the fact of connexion the abler pupils can be encouraged to adopt the attitude of expecting connexions and development, and of activity searching for these.
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> When dealing with a syllabus which allows of this continuous development, it is advantageous to divide the material into topics and sub-topics, each of which is a comprehensible unity, at the end of which reference may be made to the next following topic, giving rise to anticipatory curiosity. Teachers can often take a leaf out of the book of the publishers of serial stories and makers of screen serials, and close each episode at an intriguing and exciting juncture, whetting the appetite of the pupils for the next topic.[1]

The teacher should be careful to see that the work he expects from his pupils is properly graded according to their abilities. One of the best incentives to further work is the successful completion of a task. There are two dangers to be avoided. On the one hand the task must not be so difficult as to discourage the pupils and make effort seem useless. On the other hand it must not be so easy as to be accomplished with but little effort. Interest soon departs when a thing can be done with no effort. Thus school work should be graded in difficulty according to the ability of the pupil, so that it is difficult enough to call forth his best efforts, but not so difficult as to discourage him. Individuals vary in how they are prepared to tackle difficulties, and the teacher can vary the difficulty according to the individual or group concerned. This is not always easy to do when teaching the class as a whole, and is an argument in favour of individual work methods. But in mathematics and the mother-tongue it can be done even when teaching the class as a whole.

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[1] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941), p. 120.

In the same way, if marks are given for work done, the pupil's ability and powers, and especially the degree to which he has used them, should be taken into account. The teacher may get two pieces of work, which, judged by an objective standard are more or less of the same value. But he knows that in the one case, a clever pupil has not put his best into the work, while in the other case a weaker pupil has done his best, and worked harder on the task than the first one. This second one should get a higher mark. The teacher will explain his method of marking to the class so that they understand that the effort put into the work is taken into account when marks are awarded. In a weak pupil, interest will be killed if he is ruthlessly marked down, time after time, according to an objective standard. The teacher, it will be obvious, must know his pupils well to be able to mark in this way.

Rewards for good work may be used to stimulate interest, but it is very doubtful if prizes are of much use in this respect. The teacher's praise and approbation are of far greater value, if judiciously given. In this the teacher's action will depend on the individual. Some need praise and encouragement; some need sharpness and a challenge; some need competition. Generally a teacher should try to suggest to his pupils that they are capable of doing well what he asks them to do. He should praise all conscientious effort and all improvement. He should use mistakes, provided they are not due to sheer carelessness, as stepping stones to improvement rather than as occasions for censure or punishment.

The teacher should give definite tasks to be done in a definite time, ensuring as far as possible that the tasks are not too difficult, and, wherever possible, varying them according to the individual. He should keep the standard he sets for each pupil steadily advancing. He must always guard against complacency setting in, especially among clever pupils. No pupil should ever be allowed to think that he does not need to try. The teacher must always keep the standard required ahead of the standard reached, by class or by individual pupil. If the teacher is to be successful in stimulating interest, he must know his individual pupils, and must try to deal with them individually as far as possible. This is a fundamental principle in all motivation.

Finally the teacher must watch the health of his pupils and guard against over-fatigue. Lack of interest is all too often the result of bad health, and of such diseases as dysentery and hookworm, of the presence of which the victims may not be aware. Lack of interest is also due to insufficient recreation and games, to lack of proper ventilation in schoolrooms, to lack of proper food and nourishment. With some of these things the teacher can do little. In the case of others he can be of great help. He can always see to it that causes of over-fatigue in school are removed. Interest will never be created and maintained as it ought to be if physical conditions are not up to the mark because of disease or fatigue.

CHAPTER IV

METHODS OF TEACHING

CLASS TEACHING

WHEN WE THINK of teaching and teaching methods we usually think of a class, because in our schools we usually teach classes. The normal arrangement in most schools is that the pupils are divided into classes and the teachers give lessons to classes. Most of us will have to fit into this arrangement when we teach. That is, most of a teacher's work in the ordinary school will consist of dealing with a class. Most of his methods will be methods which can be used when dealing with a group of pupils, thirty, forty or even fifty in number. Hence the importance of knowing how to deal with such a group of small children.

It is well that we should understand both the advantages of dealing with a whole class, and also its difficulties and disadvantages. If we know the advantages we can model our methods to make the most of those advantages, and if we know the difficulties and disadvantages we can model our methods to avoid them as far as possible; or, at least, to minimize them.

Advantages of Class Teaching

1. Teaching a number of pupils together, as we have them in a class, saves time and energy. Many of the pupils have the same difficulties, and it saves time to go over such things, and explain them once, when everyone is listening. A lot of time would be wasted if this

had to be done with each pupil separately. It also obviously saves the energy of the teacher.

2. Class teaching uses the herd instinct, and the desire of children to be together when they are working or playing. The feeling of being one of a group of which all members have more or less the same object helps work in many cases, especially in the cases of those in whom the instinct of self-assertion is not very strong.

3. Teaching children as a class makes it easier to rouse enthusiasm and interest. Enthusiasm and interest are often infectious. One catches it from another, especially when all are openly engaged in the same work. If children are working separately, and one does not know what the other is doing, there is a barrier to the spread of enthusiasm, and especially a barrier to enthusiasm and interest spreading from teacher to class.

> The class can clearly rouse enthusiasm and so act as a spur to that individual effort which is necessary in all forms of work. It can, for example, make a pupil want to read, . . . or to understand, . . . and as the effort the ordinary human being puts into his work is commensurate with his desire to accomplish it, this sort of lesson is of enormous value.[1]

4. Class teaching can develop co-operation. A good class teacher can rouse the interest of most of a class so that they all wish to make their contribution to the success of a lesson, to the solution of a problem, to the accomplishment of some piece of work, to the carrying out of some project. Working as a class, under careful guidance, pupils can learn to work together, and here probably lies the greatest value of class teaching. The lesson where two or three pupils who are bright and

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[1] N. Catty, *A First Book on Teaching* (Methuen, 1941), p. 51.

clever do all the work and make all the response, while those who are weak and timid are allowed to sit back and let the clever ones do it, though unfortunately not uncommon, is not proper class teaching and is thoroughly bad from all points of view.

5. In class teaching we can develop appreciation of work well done better than by any other means. Such appreciation of good work done by members of a class can be a spur to other members to put forth all their powers, or at least more of their powers than they did before. That is, being in a class, acts, or under skilful guidance can act, as a stimulus. We have to avoid the danger of unhealthy competition, but a certain amount of competition is not unhealthy, and children certainly gain a stimulus from working together in a class.

6. Class teaching is the best way to give suggestions to our pupils, and to give them new knowledge which must be told them. In all cases where suggestion is to be used by the teacher, such as in appreciation lessons, in teaching morals or religion, class teaching will always have a chief place. One might say that it is essential for appreciation lessons. And when we have to give information, as we often have to, which the child has no means of getting for himself, then class teaching is often the most convenient means at our disposal.

These things, then, we will remember when adopting our methods of teaching. As things are, of course, class teaching is often the only practicable means of grappling with the situation in which we are placed, apart from the advantages or disadvantages of the system. With the numbers in classes and the number of teachers in schools, nothing else can be done but to teach, or try to teach, large classes, and the circumstances preclude any other method but class teaching being used. But even though this is so, it is well for us to realize the defects and disadvantages of the system, as then we may be able to do something to minimize them.

Chief Defects of Class Teaching

1. Every child in every class is different from every other child. When we assemble children in classes we try to have them as nearly of one standard of *knowledge* as possible. But even here there are wide differences between the top pupils in the class and the bottom ones. But no attempt can be made to secure any semblance of uniformity in intelligence or in emotional set-up. The teacher therefore is confronted with a crowd of pupils differing in make-up, differing in knowledge, differing in needs, differing in character, and he has to use one method of teaching for all of them. This is the most serious and damning defect in the class teaching system. The result usually is that the teacher pays no attention to the emotional side of the life of his children. In dealing with intellectual matters he teaches to the average. Thus the very good ones and the very weak ones suffer. The good ones are held back and the weak ones are left behind, and little attention is paid to them. We cannot hold up the progress of a whole class of forty or fifty to give ten of them the attention they ought to have. This difficulty can be met to a small extent by strictness in promotions, but in actual practice it is not met, and is a difficulty that every teacher in every class has every day of his teaching life.

2. Class teaching is very apt to result in a passive attitude on the part of the pupils. They sit and listen, and often just sit. As every teacher knows, and as every pupil knows, it is easy to seem to be taking an intelligent

interest in what is going on, but to be in a different world of thought altogether. And sometimes pupils do not even trouble to seem to be paying attention. With a class of fifty pupils it is obviously difficult to see that all are active. In some subjects especially, it is impossible, in any system of class teaching, for a teacher, however skilful, to make sure that his pupils are mentally active all the time.

3. In class teaching there is always a danger of a joint effort being mistaken for an individual one. This is a danger for both pupil and teacher. The child can sing a song along with the rest of the class, but fails miserably when he tries to sing it by himself. It is a very different matter, doing things by ourselves. *But we know only those things which we can do ourselves*. The class as a whole, each offering his share to the work, may solve some problem in arithmetic. Everyone seems to understand it. But get each child to work it out by himself, and we will soon see what a false impression we had. This is one of the greatest dangers in class teaching, the false idea of progress we get if we are not careful. The reason for this is that each must learn for himself, and real assimilation and learning is the result of individual effort. Co-operative work may and does help, but in the final analysis we must have the individual effort. Class teaching, in naturally directing attention to the mass effort, tends to make us forget this truth.

It is common to hear teachers, after having explained something, saying to the class, 'Now do you understand?' The class gives an answering shout of 'Yes' and, perhaps lest his peace of mind be disturbed, the teacher passes on. If the curious observer begins to ask a few questions, however, it soon becomes all too clear that many were either consciously deluding their teacher or unconsciously deluding themselves. The importance of this for our method is obvious and we will return to it when dealing with questions.

In the nineteenth century in England the conditions of popular education compelled teachers to concentrate upon the problem of how best to instruct large numbers of children when taken together in a definite range of work to be covered in a definite time. This resulted in an over-emphasis being placed on exposition and demonstration, or what became commonly known as 'class teaching'. It would be unjust to minimize the fine work which teachers did in this direction, and not to recognize that the methods they worked out and the standards of technical efficiency they reached tended to the improvement of teaching in schools where far easier conditions obtained. With the growth of modern methods and modern material aids, class teaching undoubtedly became an educational instrument with great and special virtues of its own. It will always have a place in the teacher's armoury, though not the predominant place it has held in the past. There are limits to its flexibility, and therefore to its usefulness; it cannot always be adjusted, as closely as teaching should be, to the varying needs of children or to the natural movement of their minds. It is generally recognized today that children can play a far more active part in their education than is possible under a predominance of 'class teaching' and that they differ greatly in their powers and rate of learning. It is widely held that children should be allowed as far as possible to proceed at their own pace. This view has led in recent years to a great increase in schools, of work of the kind which we have described as experimentation by the child himself. This is more marked perhaps as yet in the case of children below the age of five and above the age of eleven.

(*a*) Since the immediate aim of teaching is that the pupil shall become an active learner, any method which is claimed, on reasonable grounds, to conduce to that end is worthy of unbiased study.

(*b*) The well-tried methods of corporate teaching have an indispensable place in the school economy, and should not be discarded wholesale in obedience to insufficiently tested theories.

(*c*) Nevertheless there are occasions and purposes for which they are clearly not so suitable as methods which, while not depriving the pupil of the stimulus, inspiration and guidance of the teacher, yet leave him reasonable scope to follow his own special interests, to learn in his own way, and to acquire the priceless habit of independent purposeful work.

(*d*) While these considerations are of general validity, they apply specially to small rural schools where from the nature of the case, class organization and class teaching must have a particularly limited value.[1]

Since, however, most teachers have to deal very largely with classes, let us consider in more detail the methods to be used, keeping in mind the principles we have already discussed.

First of all there are some practical things which every new teacher should remember. In her book, *A First Book on Teaching*, Miss Catty gives a good list of these. Her list is as follows:

1. Know exactly what you are going to teach.
2. Organize thoroughly.
3. Make the best of all apparatus that can be obtained.
4. Teach the whole class.
5. Try to be calm and natural.
6. Remember the test of good class teaching is class working.
7. Make full use of the children's knowledge.

To these we might add—

8. Make an ally of routine in matters where routine helps.

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[1] *The Primary School* (Board of Education, London, 1931), pp. 152-3.

9. Observe, and have observed by pupils, the common courtesies.
10. Enlist the co-operation of the class in discipline.

Let us examine these points :

1. The teacher must be well prepared for a class lesson. If he is going to tell a story he must know it well, and must be able to tell it vividly. If he is going to make an exposition he must be clear in his own mind about each step and how it links up with the following step. If he is vague about his subject himself he will soon lose the interest of his class. If he is going to teach a skill he must make sure that he knows *and can use* the best methods. The better he can demonstrate the skill himself the better chance there is of his children acquiring it. Too much emphasis can never be laid on preparation. In it lies much of the secret of keeping interest, and, therefore, of control of the class.

2. The teacher must organize. This is really preparation in another form. He must see that all the apparatus that will be needed is ready to hand. It is fatal to have to send for a map in the middle of a lesson or to have to stop to look for a picture. Spare pens, pencils, etc. should be ready, and anything else that is likely to be needed.

3. It is not enough to have apparatus ready. One must also use it to the best advantage. There is always a blackboard in the room, but it is not always used as it should be. One sometimes finds teachers giving a history lesson without a map in the room or at least without a map open. It is not always possible to get all the apparatus we need. But we can use well what we can get. It is not difficult for instance to get mud and clay, and a great deal can be done with this in making models in connexion with numbers of lessons. All sorts of sticks and other easily obtained things can be used with the first class, for example, in teaching counting and elementary

arithmetic. The teacher must try to use his imagination in finding and using apparatus. If he does he will again find the difference it makes to the interest taken in his lesson.

4. It is very tempting in class teaching to confine one's attention to the forward pupils. There are always several whose hands go up at once, who tend to shout 'I can tell you, sir'. And we often let them tell us and go on letting them tell us, while those who are not particularly interested in telling us anything sit back and doze away. But it is obvious what a mistake this is. We must try to teach the whole class, difficult as it may be with a large number. Each pupil must be made to feel that the teacher's attention is on him, and that he in his turn must do his share. Questions should be equally distributed all round the class. The pupils should not be questioned in order, but questions given here and there, while the teacher is careful to see that none are left out. Everyone's work should be corrected. In all that is done the teacher must remember that he is trying to teach the *whole class*.

He should stand where he can command the whole class and where he has the best chance of seeing all that is going on. It is not necessary or wise to stand always in the same position. He should see that the blackboard is in a position where it can be seen easily by all. Writing on the blackboard should be clear and easily read. The teacher should speak distinctly and not too quickly. There is no need to shout but he must be heard easily by all.

> But when all is written, it is an extremely difficult thing to give an ideal class lesson, and those of the best teachers only approximate more closely to it than those of the beginner. In a real sense a teacher may be compared to a conjurer who surprises his audience by keeping ten balls in the air at once. The teacher has to encourage forty minds to think of the same subject during a given time, minds that have

different previous knowledge, different interests and work at different rates. And as the conjurer must be aware of each of the balls, so must the teacher be aware of each of the class, now giving a word of special help to one, now asking the question that will make another try to think out a difficulty.

It sounds alarming, but as a matter of fact if the lesson is carefully prepared, suitable to the class and given in a business-like and cheerful way, the average child in the average class attends.[1]

5. It is perhaps cruel to tell a person to be calm and natural when they are beginning to teach, especially during the first efforts. It is just the thing which it is so difficult to be. The careful preparation and attention to organization which we have considered will be a big help in this. Knowledge of being prepared gives confidence. Then again, real interest in one's subject also helps greatly. If we are interested in our subject *and* in our pupils, we will forget about ourselves and our fears.

6. Methods of encouraging activity in a class will be discussed later, but the teacher should never forget that the aim of his teaching is to make the class active and to get them working for themselves. As a matter of fact, if he is troubled by discipline, or by nervousness in himself, setting the class to work is one of the best means of calming down both the class and himself.

The teacher must try to keep everyone busy. Sometimes in arithmetic, for example, the quicker pupils finish a sum before most of the class. They should be allowed to go on with other sums, and should not be made to wait for the rest of the class. If the teacher finds that only 20 per cent of the class has been able to do a sum, and feels he must go over it with the whole class, those who have done it and who understand the rule, should not be made to listen to an explanation they already understand, but should be allowed to go on with other sums, thus getting more practice. Nothing will kill the interest of good pupils more quickly than to hold them back and make them sit, mentally inactive. This must always be avoided.

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[1] N. Catty, *A First Book on Teaching* (Methuen, 1941), pp. 28-9.

7. We have seen how we must use the children's previous knowledge and past experience when starting out on our lesson. It is also of great advantage to get children to make contributions to what is being considered during the lesson. This will add very considerably to the interest of the lesson. It is a sign of good teaching when children in a class are seen to feel free to offer their own contributions of knowledge and experience. The teacher should welcome all such and encourage this kind of co-operation. It may perhaps lead him away from what he has written down in his notes, for a while. But if what is offered by the children is really relevant, this will not matter. The teacher can easily get back to his plan, and the lesson will have been enriched.

There is a danger here; that is, the danger of being side-tracked. To draw the teacher away from the subject is a favourite occupation of college students, and is not rare among older school pupils. It may often be attempted unconsciously by younger pupils, who naturally want to study what they are more interested in. Pupils are naturally interested in what they themselves have experienced, and if the teacher is not careful, when pupils find that their contributions are welcomed, they may get into the habit of bringing up things which are really irrelevant. This, however, is not a difficult matter to deal with as long as the teacher is watchful. He soon learns how to keep his lesson on the right track. If by any chance the teacher does run up against some precocious or mischievous youngster who seems to take a delight in deliberately drawing red herrings across the scent of the real lesson, he will have to deal with such a pupil by himself, and take measures to persuade him to be reasonable.

8. Routine can be both a servant and a master. We must never let it become our master, but if it is really our servant, like habit, it can save a lot of time and trouble. There are certain things such as the cleaning of the blackboard, opening of windows, methods of entering and leaving a classroom, and such common occurrences which should have a settled routine. That is, there should be a settled habitual way in which such things are done, a settled time for them to be done, a regular way of settling by whom they are to be done. If all such things are recognized 'habits', as we may call them, of the classroom, then a great deal of time and energy is saved, and can be used for more important matters. The teacher, of course, should never be afraid to change routine if he finds it advisable, but having a settled way of doing all such regular things will help very greatly with the general atmosphere and discipline of the class. Children like things to be done in an orderly way.

9. There are many rules of common politeness which ought to be observed by both teacher and pupils. It is rude to interrupt or to try to talk when someone else is talking, therefore the teacher should not allow a number of children to try to shout out answers at the same time. It is bad for teaching and for discipline, of course, but it is also bad manners. It is also bad manners to be carrying on a side conversation with a neighbour when someone, teacher or pupil, is telling the class something. Therefore the teacher should not allow this. (This is a habit which large numbers of grown-ups are guilty of, but this does not make it any the less bad manners.) Children and teacher should be careful to observe the small courtesies such as saying 'Thank you' and 'Please'. These things make a vital

difference to the atmosphere of the class, and if politeness is observed every lesson will go more smoothly.

10. Discipline is often a difficulty for the young teacher as well as for the experienced one. A great deal of help can be obtained from the members of the class themselves in all but the very lowest classes, if the teacher sets himself to do so. A modified system of class self-government can be set up. The class can be divided into groups each of which is responsible for the discipline of its members. Boys showing tendencies for leadership can be put in charge of each group. Any method of this sort which the teacher finds suitable in his own particular circumstances may be used, but if this principle of trying to get the co-operation of the pupils is observed, difficulties of discipline, though perhaps never solved, will be made less terrifying.

STIMULATING SELF-ACTIVITY

As we have seen when considering motivation, there is in everyone an instinctive tendency to be active and to use the powers that have been inherited. There is something wrong, mentally or physically, with a child who does not want to be active. Our problem then is not so much the stimulation of activity in our children as one of stimulating the right kind of activity, or of directing the urge to be active into the right channels. It is true that we often find children in our classes who do not seem to have any desire to be active. But usually we will find, if we go into such cases carefully, that it is a matter of interest or of health rather than of any fundamental lack in inherited endowment. All normal children want to be active. By no means do all of them want to be active in the way they are expected to be active in school.

Now there are certain principles that we should keep in mind when considering this matter of stimulating activity in children in school.

1. The first principle is that there should be as little repression as possible of children's desire to be active. It is obvious that if we want children to be active, we will not reach our goal by trying to repress the activity they show, even though the directions in which they show activity are not the directions in which we wish them to be active. If we repress them we run the danger of damming up the instinctive desires and driving them into undesirable channels, of gradually bringing the child into a frame of mind where he refuses to be active in school, and so, of defeating our own ends. In small children, especially when they first come to school, repression is to be avoided as far as possible. It cannot always be completely avoided in case of undesirable activities, but as a rule it is not necessary.

2. The second principle follows on from the negative one we have considered. It is the positive one that opportunities should be provided for children to be active. This is admittedly not as easy as it sounds, especially with large classes. But if we really wish our pupils to develop habits of mental and physical self-activity, then it is obvious that we must give them opportunities to be active. While we should not repress them we must at the same time provide opportunities for useful and worthwhile activity. In other words, the innate urge to activity must be sublimated, directed into right channels.

3. Then comes the question of how to do this. Thus the third principle is to make use of the child's purposes as far as possible. There are certain things of which the child feels the need. This supplies a motive for a useful activity. If we can use the child's desire to fulfil a need he feels, then we can easily guide him into a useful activity.

We can also use the natural desire every child has for play, to guide him in his activity. As we know, a great deal of educational work can be done through play and play-ways of teaching. The child's instinctive urges can also be used to ensure useful activity. The spirit of competition and the instinct of self-assertion can be used. All the various instinctive powers can be used in education, and all of them give us ways of providing opportunities for our children to be active.

4. The fourth principle is that it is necessary for the teacher to know his children, their interests and special abilities. It is, of course, necessary for him to have also a general knowledge of child-nature and development. This knowledge of child-nature and of his individual pupils will help him very greatly in directing their activities. For example, if he knows that boys of a certain age like to work and play in 'gangs', then he can make his plans accordingly. If he knows that one boy in his class is especially interested in story-telling, then he knows how to give him opportunities for activity. If another is interested in map-drawing, then he is given a different kind of opportunity. Knowledge of individuals, and of children in general, therefore, is essential if the teacher wishes to stimulate and guide the desire for activity.

5. The fifth principle is that the teacher must do his best to create in his class and among the children he teaches a feeling of security and confidence. His general attitude must be one of encouragement of all efforts at self-activity whether they are crude or skilful. Children are very often frightened to try to express themselves, because they are not sure of the reception their efforts will get. If they find that their activities are received with sympathy and in a friendly way, then they will be encouraged to go on. If they find any suggestion of scorn, any lack

of interest, or any impatience, then they will retire into their shells, and the teacher's task will become very difficult. The children will have been repressed. All children of course are not easily discouraged. But large numbers, especially in their early days at school and in adolescence, are uncertain of themselves and their powers. They are averse to trying themselves out, and therefore need all the encouragement that we can give them.

When seeking to encourage activity among his children, as well as the psychological considerations we have noted the teacher will have to take into account certain physical considerations.

There is the general health of the child to be considered. I have said that no normal child is inactive. But if the health of a child is not good, he will certainly not be inclined towards activity of either mind or body. Hookworm, dysentery, malaria, any such disease saps all the energy of the child. If, therefore, we find it difficult to stimulate any particular child to activity we should see if there is not something wrong with his health.

Often home conditions are such that the child finds it difficult to be active in school. Sleeping accommodation is not good. Poverty in the home results in malnutrition and lack of energy. Too much work is sometimes required of children in their homes, resulting in lack of energy in school. Long distances to walk to school in the morning and back home after school also militate against any great show of activity in school. All such conditions have to be taken into consideration when we come up against a case of lack of desire to be active.

Fatigue caused either by home conditions or through overwork in school is another cause of lack of energy.

Sometimes lack of desire to be active is due to a lack of variety in work at school. Especially with young children in the lower classes it is necessary to pay careful attention to having as much variety as possible in the day's work. For example, the practice of working three or four periods on end at arithmetic, which one occasionally comes across in pupils in the highest class in a primary school when they are going up for a final examination, is thoroughly bad. If we expect the interest which is necessary for activity, we must have variety in the children's work.

Proper provision must be made for activity work. That is, the teacher must do his best to make arrangements so that the activities of the children are not cramped and spoilt by lack of enough room or by having to be carried on in unsuitable surroundings. Usually this problem is solved by taking classes outside into the open. It is often very difficult to create real interest in activities when they are carried on in a classroom, simply because games or other activities cannot be carried on properly in a room.

In seeking to stimulate and direct self-activity, there are certain practical measures which the teacher can take.

When the teacher is planning for activity of any sort he should always be careful to see that he has ready all the apparatus that is likely to be required. This does not mean that the teacher should have everything that the children are to use prepared ready-made for them. Great value lies in getting children to make their own apparatus. But the teacher must have ready for use in class the tools and other things which will be needed by the children if they are to make their own apparatus. For example, if the class is to work in garden plots for which they need *kurpas*, it may be possible for them to make the wooden handles for the *kurpas*. They may be able to find the wood for themselves. But they will have to have the tools to shape the handles. If the class is to use educational games of different kinds, they will be able to prepare for themselves the things that are necessary for the games. But the cardboard, paper, brushes or other tools and material necessary must be ready to hand. Nothing will dampen the enthusiasm of children more quickly than to have to wait aimlessly while some are sent off to get different things, or to find that there are not enough tools available for all of them to have a share in preparing things. Children are not patient, and when the teacher has worked up enthusiasm, or at least interest, in what is going to be done, there should be no risk of interest disappearing because things are not ready. Children like to get to a job quickly.

In stimulating activity nothing is better than play and the play spirit. The more this spirit can be used in ordinary class work the greater will be the interest, and the value of the work to the child. And play always means activity. There is no better way to stimulate activity than to use games and the play-way in all subjects. This is easy in the lower classes but can also be done to quite a large extent in higher classes.[1]

The use of problems is often a useful way to stimulate activity in the classroom. Interest in solving problems is normally easy to encourage. The teacher has to be careful that problems given to the children are not too difficult. Although they should not be too easy either, it is better to have them too easy than too difficult, and in any case easy ones should be given every now and then. Problems of various kinds can be given from the first class. Easy riddles and puzzles, such games as can be played with matching boards, matching sentences with pictures, simple problems with numbers, anything in fact which will interest the child, and lead him to think, can be brought in. As the child goes up from one class to another the difficulty of such problems will increase, always being graded according to the ability of the pupils. The more of this type of work we can give in arithmetic and algebra, history and geography, science and civics, for example, the more interesting will it be to the children and the more mental activity will be secured. The teacher, it must be repeated, must keep the ability of individual children in mind when giving problems.

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[1] See W. M. Ryburn, *Play Way English*, Bks I, II, III (Oxford University Press).

Perhaps one of the best methods of securing activity of both mind and body is what is known as the project method. In this a purpose of the child is used, and he is encouraged to carry out that purpose. In carrying out his purpose the child finds that certain things are needed, certain knowledge is necessary, so that as he goes along he makes these things, and obtains the necessary knowledge. Thus, in actively carrying out his purpose, he learns. His purpose is a centre of interest, and leads him along various lines of activity. Every subject, of course, cannot be brought into every project. The use of projects does not do away with the necessity of the usual work at the ordinary 'tool' subjects, reading, writing and arithmetic. But a project does ensure a considerable amount of activity along lines, and in subjects, connected with the project. It also has the added advantage that the child can see the use of what he is learning and doing. Very often the child is unwilling to be active because he cannot see the use of what he is being asked to do. In other words the curriculum has not justified itself to the child. When he is working on a project, then he can see that in order, for example, to build a room, it is necessary to know some arithmetic so as to be able to make the necessary calculations. In order to run a shop, arithmetic is necessary, and also writing, in keeping accounts. Thus he can see a practical value in what he is asked to learn. It is this aid in motivation that we get from the use of projects, that is one of the main benefits of the method.

The encouragement of pupil contributions is another practical way of stimulating activity. Such contributions to the work of the class may be oral, written, or pictorial. But when the children feel that they can really contribute something to what is going on in school, when they feel that their contributions are really valued, and are really worth while, then naturally they are encouraged, and begin to use their creative powers. The greater the share the pupils can take in the lesson, the greater will be their activity, and the more enthusiastic they will be over using their powers of expression.

Along the same line as this is the encouragement of children who are good at one particular thing, to help those who are not good at that part of the work. This can be done either in groups, or with one individual helping another individual.

> This attitude, that some are good at one thing, some another, and that those who are good must really help those who are not, seems to epitomize the right tone in the classroom. . . . It is wonderful how much talent can be found in a classroom, and, in addition, how much skill in training others less well-endowed, it the assumption underlies the work that those who can, help those who can't.[1]

The instinct of pugnacity can be used in order to stimulate activity through competition. Competition is one of those things which has to be used cautiously. But there is no reason why group competition in work and games should not be used in our work. There is no doubt that competitions stimulate work and play, and especially such work as calls for activity. Winning a competition is a kind of reward. Other kinds of rewards may also be used. Small exhibitions of work can be held, either for classes or for the whole school, and such exhibitions, if not held too often, will certainly stimulate activity and creative work. To have one's work placed in an exhibition is a kind of reward. Sometimes especially good work may be put up in prominent place in the classroom or in the school. If this is a regular feature of the school it will stimulate many to try to do work that may get a place of honour.

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[1] N. Catty, *A First Book on Teaching* (Methuen, 1951), p. 31.

If appreciation lessons are taken well they should form a stimulation to activity. In upper classes the appreciation of good poetry or prose stimulates some to try to imitate what they have heard and to produce good poetry and prose. In the lower classes if a story is told well the natural reaction is for children to act out the story afterwards. Appreciation work will often result in dramatization, which is a profitable field of activity. Feeling naturally results in action, and when we rouse feelings then we should expect activity as the result. We have to be careful to give the opportunities for appreciation to express itself in action. If we are really anxious to stimulate activity, both mental and physical, we must provide facilities for handcraft work in our schools. Handcraft work provides opportunities for physical activity but it also stimulates mental activity. It is safe to say that unless we can provide opportunities for children to do handwork of various sorts, to have hobbies, and to use their hands and muscles actively, we will not have much success in our efforts to stimulate activity in our pupils.

In this connexion it is important to pay attention to the training of the senses. This is fundamental to all activity.

Unless children are trained to see, hear and touch correctly they will not get the satisfaction from active work which they should do. In school we are accustomed to rely too much on hearing in the early stages and too much on seeing in the later stages. We should train children to use *all their senses.* This is the foundation of activity.

Finally a great deal depends on the attitude of the teacher himself. Activity in pupils will be stimulated greatly if the teacher himself is active. A teacher who has lost his enthusiasm for active work cannot expect his pupils to show overmuch enthusiasm or interest in activity of any sort. On the other hand, the teacher who himself is interested in work that calls for mental and physical activity will unconsciously stimulate that same enthusiasm in his pupils. The power of suggestion wielded by the teacher is as great in this matter as in any other. Hence the teacher should be keen on handcraft work and should himself work at a craft. He should be interested in problems, and in all forms of self-expression. Then his enthusiasm and interest will be reflected in the lives of his pupils.

It must always be remembered that activity means mental activity as well as physical activity. Very often when we talk about activity we think only of activity of the body. This of course is necessary, but equally necessary is activity of the mind, and, shall we say, activity of the spirit. Morality is developed through active practice in doing moral acts. Thus activity is something which is concerned with every part of the personality.

It must also be remembered that we must be careful to guide activity. It is no use setting before pupils tasks which are too difficult for them to carry out. If they are to do something or to make something it must be something at which they can be moderately successful. For young children tasks should not be too long. A child likes to see the completed result of his labour quickly. If the task is too long then the child loses interest. But in this as in other things, the teacher will grade the work according to the individual. If some child really wishes to do something which seems to the teacher to be too difficult for him, he should be allowed to try his hand at what he wants to do. The teacher will know his children, and the capabilities of each child, and will know what to expect of each child. If the child is really keen, then it is good for him to tackle difficult works.

Our aim is to train our children so that they may develop the habit of being active in mind and body and character. This is a gradual process, but if we start from the first class and use the natural urges of our children there is nothing particularly difficult in carrying out this aim. But it is a habit that is cultivated only by constant practice. This practice must be guided and directed. Activity just for the sake of being active is not of very much use. Activity is desirable because only through being active does the personality develop. But this sort of activity is not an aimless doing of first one thing and then another. It is an activity directed towards an end. Hence, when we seek to stimulate activity in our children we must always have before us the object at which we are aiming, and this will ensure us giving the correct guidance and direction which will enable our children to develop to the full the powers that they have.

QUESTIONS

The question is of the greatest importance in teaching. It is no exaggeration to say that the success of a teacher in any particular lesson, and in teaching in general, depends on his ability to question well. The question stimulates the child, and, if skillfully used, can also direct his learning. The efficiency of teaching can therefore, to a large extent, be determined by the kind of questions asked, and the skill with which they are framed. 'It would be impossible to consider adequately methods of teaching without recognizing the question as an essential element in all teaching procedures. The question is the key to all educative activity above the habit-skill level.'[1]

If the technique of asking questions is, then, of such importance, a teacher should try to train himself to use the question wisely. This involves the development in the teacher of skill in certain directions.

A. *The Teacher*—In the first place a wise use of the question requires attention to the wording of questions. This may sound an easy thing. Anyone can ask a question. But if we consider the matter a moment we will see that if we are asking a question with a definite object in view, we have to be careful how we frame the question. We have to be careful about the words we use so that they express exactly, or as exactly as possible, our meaning. They must be clearly understood by those from whom we are seeking the answer. The teacher has to cultivate the art of asking questions clearly and definitely.

2. The teacher also has to cultivate the art of clear, logical thinking if he is to be able to question well, particularly if he wishes to use his questions to help his children to follow up a line of thought or study. One question must follow on logically from the one before, and must also be framed so as to lead on to the one to follow. This is not at all an easy thing to do, and until a teacher has

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[1] S. C. Parker, *Methods of Teaching in High Schools* (Ginn, 1920), p. 466.

had a good deal of experience, careful attention has to be paid to it when preparing lessons.

3. Not only must the teacher be able to think clearly and logically, but he should be able to think quickly. Very often an answer is not what was expected, nor such as would lead on along the line which the teacher wished to pursue. The teacher has to decide quickly what to do. He must decide whether to follow up the sideline suggested by the answer or whether to stick to his prepared plan. Again he has to be able to think quickly of questions which will make his children think for themselves when he finds them unexpectedly blocked by some difficulty. He has to be able to think quickly of easier questions which will enable weaker members of the class to reach the point where he wishes them to arrive.

4. Again, the teacher has to cultivate a sense of relative values. He has to be able to decide, as we have seen, whether a suggested sideline, or at least a different line of advance, is better than what he has prepared or not. He has to decide which questions are the most important for his class to think over. He has to decide on how much time he must spend on different subjects in his lesson, on which to ask more questions, on which he can lead his class by his questions to come to their own conclusions, on which he can dismiss with a few questions. He has to determine the time he will put in at revision questions, and the time he will put in at what we may call 'teaching' questions. All this needs the ability to determine the relative value of different types of questions in relation to this lesson.

B. *The Objects of asking Questions*–The objects of asking questions in school and class are somewhat different from the ordinary object of asking a question. This is to get information, usually of facts. We ask a question when we want to find out some fact. But in school this is not the usual object. The school question considered from this point of view is an artificial thing. The teacher is certainly often seeking for information when he asks a question, but it is not the information which comes in the answer. He seeks to find out by his question, for instance, whether the child who is questioned knows the answer. The teacher is not concerned with the content of the answer from the point of view of fact except in so far as it shows him something about the knowledge of the child.

1. This then is the first object of asking questions in school, to test knowledge. The teacher asks questions to find out how much the child knows. I have called this artificial because the teacher is not wanting factual knowledge when he asks his question, and to the child, when a person asks a question, they do so because they want to get the information supplied in the answer. The small boy who was in a class having a lesson on a cat, and, after a number of questions about the cat, suddenly burst out with, 'Teacher, ain't you ever seen a cat ?' was protesting unconsciously against the artificiality of the procedure. However, such questions have to be asked. But the teacher should make plain to the class the real object of his questions.

2. The second object of asking questions is to rouse interest and challenge attention. This is a very common use of questions at the beginning of a lesson. The question directs attention to something in which the children are interested or liable to be interested. 'Have you seen a railway engine ?' introducing a lesson on George Stephenson rouses interest, and directs attention. In the same way, in different stages of the lesson questions can be used for the same purpose. Questions can be used to

direct attention to particular points in what is being done, and here again create or sustain interest.

3. Questions are used with the object of developing a line of thought. By means of questions the class can be led from one point to another and so led to think for themselves. A series of such questions, when they can be used, are usually much better than the teacher using straightforward exposition, while the children passively follow what he says. There is no mental activity then. But if they are thinking out the answers to questions then they are mentally active, and they develop the required line of thought for themselves. The following is an example of how a line of thought can be developed by a series of questions.

> Have you seen the cotton plant?
> Where did you see it?
> What is it like?
> How do we get cotton from it?
> After it is picked what is done with it?
> What is done to it in the local mill?
> Then where does it go?
> When it is spun into thread, what is done with the thread?
> Then what happens to the cloth?
> Where do you get the cloth?
> What do you do with the cloth?

It will not be possible to get answers to all such questions in a series from any or every child in a class. Sometimes when the children simply have not the knowledge, the teacher will have to supply the answers. But such a series of questions, arising naturally one from the other, should be used whenever possible. Obviously it can be used chiefly to link up previously unconnected facts. The method is of no use unless the children already possess most of the factual knowledge. Its value lies in enabling them to connect up facts, and in training them in connected thinking for themselves.

4. Questions may also be used to test children's ability to use their knowledge. Such questions have the added advantage that while testing they also give mental training, since they give opportunities for mental activity. Arithmetic gives many opportunities for the use of such questions. A good deal of knowledge is learned by heart, and the danger is that children get into the habit of relying purely on memory instead of learning to use what they have learned, in new situations. It is easy in arithmetic to ask questions the answers to which involve the solving of problems which, in turn, involves the use of previously gained knowledge, such as tables. Such problems will increase in difficulty with the class being taught. This type of question is as important as the last type we considered, and can be used in almost all lessons.

> The fundamental change, then, that must be brought about in your whole conception of test questioning is that it must be based on finding out 'Can the boys use their knowledge without any help from you ?' If you will keep this constantly in your mind and act on it you will find that you will not be able to rely as formerly only on verbal memory.[1]

5. We may sum up the last two objects under the general object of questioning, namely that it is to make children think for themselves. Whether it is helping them to follow out a line of thought, or to use the knowledge they have, our main object is to lead them to think. Hence the type of question which merely calls for the reproduction of facts that have been learned by heart, though it has its place,

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[1] H. Dippie, *Suggestions for Primary School Teachers in India* (Oxford University Press, 1943), p. 187.

is not the type of question which we should chiefly use. There is little value, for instance, when asking children questions about a story or the subject-matter of a lesson they have read, to ask questions that can be answered in the words of the book. Our questions should be such as call for a little thought on the part of the child. As children grow up, the question word 'Why' should be much more prominent in our questions than the other question words.

6. The last object of questioning in class teaching is to lead children to see whether they really understand what they are doing or not. Very often children, just like grown-ups, deceive themselves. They think they understand what has been done. It is only when they are brought up against answering a question, the answer to which involves the understanding of what has been done, that they realize that they have not really understood it. Hence in many lessons there will be questions designed by the teacher to let him and his children know whether they have really understood what has been done. For instance, a child may think he understands an idiom and how to use it. But it is only when asked to use the idiom in a sentence of his own that either he or his teacher can be sure that he really understands it.

C. *When to ask Questions*–The teacher will ask questions at the beginning of the lesson. This will form part of the first stage in the lesson. When the teacher wishes to find out exactly what his children know in order to link up what he is going to do with their previous knowledge, it is usually necessary to ask a few questions. This of course will be especially true when the teacher is new to the class or when pupil teachers are doing practice teaching.

Then also the teacher will use questions in the first stage of his lesson to bring to the attention of his children certain facts or ideas which he wishes them to have in the forefront of their consciousness when he is starting out to give them some new knowledge. That is, asking questions at the beginning of a lesson will have the double purpose of enabling the teacher to find out something about the previous knowledge of his children, and of bringing that knowledge to the immediate attention of his children so that he may link it up with the new material he is going to give.

2. Questions should be used during the course of a lesson to make sure that pupils understand what is being told them or what they are trying to do. This type of question must be used with judgement. If a teacher is telling a story, for example, he should not break into his story with questions. He should tell it right through. Then he can go over it a second time, and this time he can ask the questions he considers necessary to see if it has been understood. This applies to stories in any subject, Urdu, history, geography, nature study or anything else. If a paragraph is being read, questions should wait till it is finished, and the teacher is going over it a second time.

As has been already pointed out, such questions should be put in a form which can be easily understood, and should also be such that they call for an answer that is the result of a little thought. They should not encourage mere rote memory. The best way to find out whether the meaning of a word is understood is to get it used in a sentence.

> Once a tiny little boy read a sentence containing the word 'sky'. The teacher was told to find out whether the boy understood. He at once asked, 'What is the sky?'— an impossible question for a five-year old boy...a simple method of testing such small boys is 'What can you see in the sky at night?' or 'Where did you see the moon last night?' If the boy can answer these questions it is quite clear that

he knows the meaning of 'sky' and can use his knowledge without being able to give a synonym.[1]

3. As we have already seen, questions may be used in exposition when leading a class on from one point to another. The line of thought is developed by means of questions and in an inductive type of lesson they form a very valuable part of the lesson.

4. Questions can also be used in exposition to direct attention to important points. The question comes as a jolt. It can also be used to help observation. Observation can be guided by means of questions which direct attention to points that have escaped notice.

5. Questions must be largely used in revision and in drill work, which is a kind of revision. Revision is not of much use if it simply means the teacher going over what has been done. By means of questions the teacher can help the children actively to go over the work being revised, and as a result such revision is much more effective. No doubt the teacher will often wonder what he has been doing all the term, but in spite of the deflation that may come from asking the class questions, it is the method to be used in revision work. In the same way a few quick questions in drill work, such as tables and other kinds of mental arithmetic, are often very useful. Just a little of such drill questioning each day is enough, but it gives variety and is very useful in making automatic the use of the tools with which the child has to work.

D. *The Technique of Questioning*–There are some things which the teacher must remember when questioning his class.

1. The teacher should ask the question first and then

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[1] H. Dippie, *Suggestions for Primary School Teachers in India* (Oxford University Press, 1943), p. 185.

call on someone to answer it. He should not name a pupil first and then ask the question.

If the question is asked first, of the whole class, then everyone will make some attempt to think of the answer because they will not know who is going to be asked. Everyone is given the opportunity to try to answer it. If one boy is called on before the question is asked, the attitude of most will be 'This does not concern me. Let him do it.' Besides this, if the question is asked of all then the critical attention of, if not all, at least a good number, will be directed to the answer. There may be differences of opinion from which much valuable work may come. Asking one pupil first so that the others don't bother with the answer loses this advantage.

2. The teacher should distribute his questions evenly. He should not neglect any pupil. On the other hand he should not give his questions in a regular order round the class. The result of doing this will be the same as if he had named the pupil first and then asked the question. In fact it will be worse, because the boys will calculate where their turn is coming, and, if it is reading for instance, will start in to prepare the bit which they calculate is coming to them. The class should not be able to depend on where questions are coming. It is easy of course to make sure that everyone gets a turn if this method is adopted. But it is bad teaching. The teacher has to watch and see that although his questions are asked here and there in no regular order, he does not neglect anyone, especially the ones at the very back or in the very front.

3. When a question is asked, unless it is a case of quick drill work, where answers ought to come automatically, the teacher should allow plenty of time for pupils to think out the answer. The time allowed will depend on the nature of the question. It will also depend on the pupils

from whom the answer is to be asked. Naturally some will be able to answer much more quickly than others. But the teacher must consider his slower ones and give them time to think.

4. The teacher should be careful not to use the form of question which suggests the answer. 'The old man had a big stick, hadn't he?' is a bad question because whether the child knows anything about it or not he will answer 'Yes'. 'Don't you think this a beautiful poem?' is another bad form of question as the child will naturally answer 'Yes' in eight cases out of ten, as he easily sees that 'Yes' is what the teacher wants him to say, and he is always willing to oblige. The question should be put into such a form that the child has to make up his mind for himself, and has to think for himself.

5. The teacher should always accept inability to answer a question when it is clear that the child really does not know or cannot think of the answer. Sometimes teachers waste a lot of time trying to get an answer out of a child who cannot answer. Children of course may not be interested enough to try to answer, and this is a different matter. Also it is often possible, by starting with simpler questions, to progress up to the original one, and succeed in getting an answer from a child who previously did not think he could answer the question. The teacher has to try to recognize when the case is hopeless and when it is not, and save his time or use it wisely, accordingly. He has to remember, however, when he is teaching a class, that he cannot spend too much time over any one individual however advantageous it may be for that individual.

6. Questions must be graded. This is obvious enough but often teachers seem to forget it. Questions should as a general rule be neither too easy nor too difficult. Occasionally difficult ones may be given for the benefit

of the clever pupils in the class. The teacher will also ask easy questions of weaker pupils, and more difficult ones of brighter ones. He has to grade his questions according to the individual he is dealing with at the time. His rule should be to ask a question from a pupil which is just slightly on the difficult side, or if he sees encouragement is needed, to ask an easy one. The standard of difficulty will be decided by the standard of intelligence and attainment of the individual pupil.

7. A question once asked should not be repeated unless the teacher is sure the class has not understood it. If the teacher gets into the habit of repeating his questions, the class will get into the habit of not paying attention the first time the question is asked. If the teacher finds that his question is not understood, then he must change it. Either the wording may be changed or he may find it necessary to ask a simpler question first which will lead up to his original one.

8. Questions should be clearly stated in words the children can understand. There should be no ambiguity about the meaning of the question.

9. When a teacher finds certain children becoming inattentive he should ask them questions.

10. The teacher should always try to give the pupil the idea that he can answer the question, especially when it is not a matter of remembering facts, but of thinking out an answer. The power of suggestion should be used by the teacher to help his pupils. They will be much more likely to use their brains successfully if they feel that their teacher thinks they can find the answer, than if they have the feeling that their teacher feels hopeless about their being able to answer his questions.

11. The teacher should not always accept the first correct answer. He should sometimes pass on without

saying whether the answer is right or wrong, and ask a second or third one. If the teacher is in the habit of accepting the first correct answer he gets, the class knows that when he asks for a second answer the first one is wrong and they answer accordingly. But if he does not have this habit, the second pupil asked will not know merely from the fact that he has been asked, whether the first answer was right or not. He will therefore have to depend on his own thinking and rely on himself.

12. The teacher should try to vary the forms of his questions.The same thing can be asked in different ways, and it is always dangerous to get into a stereotyped habit of doing things. The children will do the same, and this is fatal to developing their thinking powers. For example the question, 'Where does cotton grow ?' can be varied to 'Where would you go if you wanted to see cotton growing?'

E. *The Teacher's Attitude to Pupil's Answers*–The teacher should always be as appreciative of answers as possible. Sometimes, to be sure, one cannot be very appreciative, and a pupil must always be shown where his answer is wrong. But at the same time the teacher should show whatever appreciation he can. The child needs encouragement.

2. An imperfect answer may be used as a starting-point, and the full and correct answer may gradually be built up, either by the one pupil who is being questioned or by other members of the class. That is, the question which is partly wrong, or incomplete, may be used as a means of helping the children to think. In any case the teacher should make the most of what has been given. 'Yes, that is right, but there is something more that we could say.' 'That is right. Can anyone add anything to what has been given ?' Some such response to answers gives the needed

encouragement, and also carries on the subject so that it can be further developed.

3. Sometimes an answer, especially the answers of good pupils, may be referred back to the class. The class can be asked if the answer is right or if they agree with it.

4. If an answer is definitely wrong, then the pupil should be told so and *the reason why the answer is wrong should be explained.* This is very important. So often the teacher simply says, 'No, that is wrong,' and passes on till he gets the right answer without explaining why the first answer is wrong. The result is that the pupil who gave the wrong answer often does not know why or where it is wrong. He can see quite well the difference between his answer and the one accepted, but he does not understand where he has gone wrong. Unless the teacher explains carefully why his answer is wrong he will never learn, but will gradually be enveloped in an ever increasingly dense fog as far as that subject is concerned. This is epecially true of arithmetic, but is true of all subjects. The teacher should always explain why a wrong answer is wrong.

A wrong answer can sometimes be used as a starting-point also. By using it skilfully, a pupil may be led to find out for himself where he has gone wrong. If the teacher thinks it is possible for him, when given some indications to find out his mistake, then, of course, it is better for the pupil to correct himself. The answer which is partly right and partly wrong will be dealt with in the same way as the incomplete answer.

5. The teacher must make sure that pupils really understand the words they use in their answers. Sometimes words are used parrot fashion and, although they make sense, yet they are not the result of any thought or understanding on the part of the child. If the teacher has any suspicion that a child's answer is just words, he must go

deeper into the matter with the child, and make sure that he really understand what he is talking about.

6. Sometimes answers will not be those expected or wanted by the teacher. In such cases the teacher must be adaptable. If the answer is sensible then he may be able to make use of it even though it may lead him some distance from the plan he has mapped out for the lesson. The teacher has to decide quickly whether following up such an answer is going to be profitable or not. He should never allow himself to be bound down rigidly by his lesson plan if he thinks that something profitable is being opened up. On the other hand, if he decides that the answer will lead to things which are quite irrelevant and of no use, then he must not allow himself or the class to be led off into useless tracks.

7. As a rule the teacher should not help the pupil with his answer. If he gets stuck it is better to get another pupil to help him out. This procedure cannot be laid down as a hard and fast rule. The teacher will have to decide according to circumstances, but if the pupils get to know that the teacher is ready to supply them with words, and with half the answer if they get the first half of it out, then they will gradually get into the habit of not bothering to be exact and accurate, and will not think things through properly for themselves.

8. There is some disagreement over the question as to whether teachers should always insist on having answers given in complete sentences. I think that this depends on the type of lesson. Usually in oral work the teacher should accept answers which would be normally given in ordinary conversation. That is, in answering questions in mental arithmetic there is no need for complete sentences to be used. And in a conversation type of lesson on a reader, conversational answers should be accepted. But

in a lesson where the teacher is aiming at developing expression in language, or in history and geography lessons, where correct expression is important, then complete sentences should be used. This matter will have to be decided by the teacher according to the aim of his lesson, the type of lesson, and the ultimate effect which answers given are going to have on the child's general habits of expression.

9. Needless to say, although the practice is commonly found, there should be no answering in unison allowed. Nor should two or three eager members be allowed to shout out answers or to interrupt others who are slower or are perhaps making a mistake. As we have seen, ordinary courtesy must be observed in the classroom.

10. Another habit often found, for which there is no justification, is that of the teacher more or less mechanically repeating an answer, a correct one of course, after a child has given it. There is no reason for this unless the teacher wishes to impress the answer on the class. And if he makes a habit of doing it with every answer then he loses any chance of making an impression when he really wishes to. It is a waste of time. If the teacher wants the answer repeated it is better to get another pupil to do so than to do it himself. Lastly, if answers to questions are not forthcoming the teacher should reconsider his question or his approach to it; he should not stamp his foot and say '*Now come along!*'[1]

F. *The Teacher's Attitude to Pupils' Questions*—It is a sign of good teaching when a class is found to be anxious to ask questions. A teacher should welcome all questions. This is the first point. The teacher should encourage his pupils to ask questions. By so doing, provided he deals with the questions properly, his pupils will learn more and more quickly.

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[1] M. Sturt & E. C. Oakden, *Matter and Method in Education* (Kegan Paul, 1948), p. 187.

2. At the same time the teacher must insist on relevancy. Questions that have nothing to do with the subject in hand may be noted and answered privately at some convenient time. But the class as a whole has to be considered.

3. As we have already seen, courtesy must be insisted on. The teacher should not allow several pupils to ask questions at the same time. He must also insist on everyone listening to a question which is asked, and to its answer.

4. Wherever possible, try to help pupils to find their own answers to their questions. Often questions asked can be made the starting-point for a small piece of investigation or for a small project.

5. When the teacher does not know the answer to a question he should frankly say so. He should not let it rest there of course. The question can form the beginning of investigation by the class if no one else knows the answer, and teacher and class together can set out to find the answer.

6. The teacher should not mind if sometimes his pupils disagree with his answers to their questions. Disagreement can be the stimulus to further study and investigation by class and teacher together.

G. *How to Stimulate Questions*—Teachers are not usually worried by too many questions. The difficulty is rather how to stimulate the class to *ask* questions. Fundamentally of course, this is a matter of interest. If pupils are interested in a subject or lesson they will ak questions, so that everything that is done to stimulate interest will stimulate questions. There are, however, two special methods which serve especially well to stimulate the asking of questions by the pupil.

1. The project method where the class or groups in the class carry out a purpose, will always result in numbers of questions being asked. The project method usually involves doing and making numbers of things for which

information is needed, and thus numbers of questions are asked. A project usually opens up a number of interesting lines of work which are new to the children carrying out the project, and so results in questions.

2. The other method is individual work, sometimes called the Dalton Plan. Although in this country, as far as I know, schemes of individual work have not been used in primary schools, the Dalton Plan has been used in primary schools in England even with classes corresponding to our third and fourth classes. There is a line for experiment here. There is no difficulty in using it in secondary schools. Individual methods of work certainly encourage pupils to ask questions about their work both from one another and from their teacher.

Normally, when a class finds that a teacher welcomes questions and that their questions are met with encouragement and sympathy, quite a number of the pupils in the class will be ready to ask questions. The attitude of the teacher has a great effect in encouraging questions from the class.

To sum up, the following must be regarded as bad questions, and should be avoided as far as possible.

1. Questions which can be answered in the words of the book; that is, questions which do not make the pupil think.
2. Long and complicated questions; that is, questions which are not easily understood.
3. Ambiguous or indefinite questions; that is, questions which leave the pupil in doubt as to what the teacher is driving at.
4. Leading questions; that is, questions which suggest the answer.
5. Questions which allow a fifty per cent chance of guessing the right answer; e.g., Was he a Hindu or a Sikh?

6. Questions which the class cannot possibly answer.
7. Tricky questions. These may be used sometimes for variety, more or less as a game, when the class has been warned. But normally they are bad questions.
8. Two questions in one, e.g., Was Akbar a tolerant king and how did he treat those of other religions?
9. Questions encouraging rote memory (except in the case of drill work).

GROUP WORK

Dividing a class into groups often enables a teacher to avoid some of the disadvantages of class teaching. His unit is smaller and therefore there is more chance of giving individual attention to pupils. The range of intelligence and attainment is less wide in a group than it is in the whole class. By using groups we can grade the children within the class. It is possible through groups to secure more active work by pupils, while at the same time the children are given chances to use their initiative and to exercise qualities of leadership.

The group is half-way between the individual and the class. Working with groups can thus often enable the teacher to combine the advantages of individual work with those of class teaching. The danger of too much individualism is avoided. The children get training in co-operation and working together, while on the other hand they also have to work as they seldom do while class teaching is going on. It must be remembered, however, that working in groups is not a method which can be used in *every* subject all the time, or at any time. It is a method which will enable the teacher to introduce variety into the work of the class, and every now and then to give a type of work which involves elements which are essential for the true development of the child.

Groups may vary in size from two pupils to half the pupils in the class. The size of the group will depend entirely on the nature of the work which is to be done. For instance, groups of two can be used for work in arithmetic. Cards can be used either for work with tables or for mental arithmetic, e.g., each child has a card with questions and answers on it and asks the child with him the questions and checks the answers. Groups of three can be used in reading work. One good reader is put with two weaker pupils and helps them as they read through the lesson. Where a school is divided into houses, the houses provide an organization which can be used for group work. If there are four houses with members of each house in each class, then the teacher has ready an organization of four groups in his class which can be used for numerous forms of group work and competitions. Thus the teacher will use groups of different sizes according to the work which is to be done.[1]

Often with a large class, if the project method is being used, it is advisable to divide the class into groups. (The house groups may with advantage be used here.) Then each group can carry out its own project. The projects may be all the same or may be different. The difficulty in allowing a large class all to work on one project, unless the project is a big one calling for a great many different kinds of activity, is that many children will have nothing to do when it comes to practical or manual work. Hence it is advisable in case of a large class to have smaller groups for projects.

In using any group organization there are certain things which the teacher has to watch carefully.

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[1] For a more detailed description of what can be done with group work see W. M. Ryburn, *The Progressive School* (Oxford University Press, second edition, 1955), pp. 142-50.

1. He has to grade his groups as evenly as possible. If groups of two are being used then the two children in a group should be evenly matched in intelligence and attainment. If he is using groups for competitive work, then naturally the groups should be as evenly matched as possible. In this case within any one group there will be some weak pupils, some average ones, and some clever ones. If groups are being used for project work this is a point that must be carefully watched. All the pupils with initiative should not be put into one group. Each group should represent the differences in grading in the whole class.

2. The teacher has to watch carefully to see that in a group the work is not done by a few pupils who can do it well, while the others sit round and watch. This is the greatest difficulty in group work. It is natural for those children who can do things well to want to do them, and for those who are not so good to let the better ones do what has to be done. The weaker ones also are apt to get the dull or uninteresting work to do, while the more interesting things are taken by the good ones. This will often be noticed in project work. A group will be apparently working, but in reality it is the few more energetic and more interested pupils who are doing most of the work, while the others spend a great deal of time passively watching what is being done by the others. In any group there are bound to be leaders, and the teacher has to see that everything is not done by the leaders, but that there is as equal a division of work and responsibility as possible. Everyone in a group must get his chance to do his share. This difficulty does not arise with small groups of two or three, but is a very real one with larger groups, especially if they are being used for competitions. Such competitions should always be arranged so that every child in every group has

to take his full share in what is being done. If a group is keen on winning a game or a competition it will naturally let the best pupils do as much as possible. The teacher has to arrange his competitions so that this is not possible.

3. As we have already suggested, the size of the group will be determined by the subject and the nature of the work. The teacher must never let himself be bound by any hard and fast rule as to the numbers in a group. One of the advantages of group work is that it is a flexible method of working which can be adopted to all sorts of conditions and circumstances.

4. The teacher must see that each group understands exactly what it has to do. This is particularly necessary when a teacher is starting this type of work with children who have not been accustomed to it. It will not take them long to understand what is involved, but for a while, careful instructions will have to be given, and it will always be necessary for the teacher to see that each group understands exactly what is to be done. Otherwise a great deal of confusion and waste of time and effort will result.

5. Linked with this is the question of supervision. Careful supervision of groups when they are working is very necessary. The teacher cannot set his groups to work on something, and then leave them to it. He has to spend his whole time moving from one group to another, seeing that they are working properly, that they are doing what is required, that all in the group are doing their share, making suggestions, and giving help where necessary. Group work does not mean an easier time for the teacher. He must supervise his groups constantly.

6. The use of competition must not be overdone. It is beneficial in creating interest and giving an incentive to work, but like so many things, is a good servant but a

bad master. The teacher must avoid the development of the idea that there must always be competitions when group work is done. Competition now and then is useful but it must not be overdone, and must always be kept within bounds.

7. Groups may be used for extra school activities. The group idea is made use of in the Wolf Cub and Boy Scout and Girl Guide organizations. Groups may be used in connexion with such extra school activities as dramatics, preparing of booklets, story-telling competitions, exhibitions of work for such occasions as Parent's Day, and so on.

8. It is not necessary, except when groups correspond to houses, to have children always in the same group. Thus a child may be in one group for work in arithmetic, but may be in another group for work in geography. This will depend a good deal on the ability of the child. His ability in different subjects will not be the same, so his group need not be the same either. In this the method again is elastic, and the teacher must be guided by the circumstances of his school and class.

The period when group work can best be used is with pupils of ages of eight to twelve. Before this period, although children like to be with others and to feel that others are about them, they show little tendency towards working with others or towards playing games requiring any degree of co-operation. It is in the 'gang' age of eight to twelve years that we find children eager to form groups and parties, and to carry out projects in groups. After this age the tendency is again towards individualism or for more intimate companionship between individuals. It is true that we have to counter this selfish tendency in adolescence with such things as team games, and to give training, wherever we can, in co-operation. But from the point of view of motivation and interest, group work methods are not as successful with older pupils as with those of the 'gang' age.

9. With older pupils, a form of group work which is very useful is the group discussion. For this the whole class may form the group with the discussion conducted by the teacher. Or the class may be divided into smaller groups for each of which there is a leader, these leaders having been previously given training and so prepared for their task by the teacher. Or a panel discussion may be used. For this a small group with the teacher as leader discuss a topic in front of the rest of the class, which listens to the discussion and is given a chance to take part in the discussion when the panel has had its innings.

This method of group discussion may be used in connexion with civics, history, geography, the mother-tongue and science. In fact any problems or subjects which come up in the course of work may be dealt with in this way. Such opportunities for discussion are very valuable in giving training to pupils to help them to think for themselves, to express themselves clearly and lucidly, and in training them in the give and take of ideas which is so important for the functioning of democracy. The teacher must emphasize the necessity of preparation and of study of the problem or subject beforehand.

INDIVIDUAL WORK[1]

Methods of individual work seek to meet some of the defects of class teaching. The objects of individual work are to secure individual attention for each child, to enable each child to work at his own rate, to ensure that the slower ones get more attention than the quicker ones (as they need more), to enable the teacher to vary his methods with different individuals according to their needs, to train children to work and think for themselves, to rely on themselves and to study for themselves.

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[1] See W. M. Ryburn, *The Teaching of English* (O.U.P., 8th ed., 1961), pp. 99-105; *The Teaching of the Mother-Tongue* (O.U.P., 3rd ed., 1950), pp. 146-58; *The Progressive School* (O.U.P., 2nd ed., 1955), pp. 97-120.

The best known method of individual work is what is called the Dalton Plan. There are many modifications of this in existence but common to practically all is the use of the assignment; so much so that a method of individual work is often called the assignment system.

The assignment is a scheme of work which is calculated to last a child a unit of time which is decided on, usually a week. The assignment is so made out that the child is given a certain amount of reading to do, a certain amount of work to learn, a certain amount of writing work to do, and all through the assignment suggestions for study are made with the object of helping the pupil with his work and of leading him to think for himself. Thus in an assignment in connexion with the mother-tongue the pupil will be told to go through some of his reader. Difficult words or phrases will be explained. Questions will be asked. He has either to write the answers to these or prepare oral answers. The questions will be such as will lead him to study intelligently the portion of the reader set. They will also open up fresh fields of thought. The pupil may be asked to write a story or a short essay and some guidance for this will be given. Any other exercises, oral or written, which the teacher wishes to have done will have their place in the assignment.

When a child has finished his assignment, that is, when he has studied the portions set, has done all the written work required, and has prepared the answers to all the questions for which oral answers are required, he comes to his teacher to have his work tested. The teacher corrects his written work, tests the oral work, and if the work has been satisfactorily done, give the pupil the next assignment. Before commencing work on this assignment, the pupil corrects the mistakes in the previous assignment.

When not engaged in correcting assignments, the teacher is giving help to those who need it. Each pupil is free to come to the teacher for help at any time. Each pupil is also free to consult books in the library at any time. In the assignment there will often be references to books in the library as well as to the textbook.

Each pupil has a graph card and the teacher has a graph sheet. When a pupil's assignment has been passed, the date is marked on the pupil's card and also on the teacher's card so that each has a record of the work done, and the teacher can see at a glance the position of everyone in the class. Naturally children will work at different rates, and the class will soon get strung out. The teacher has then to concentrate on the slower ones and help them along.

The teacher can take the class as a whole at any time for a difficulty that seems general. For those who have gone ahead this will serve as revision. There will always be a fairly large nucleus which keeps fairly well together. To meet the difficulty of the class straggling out, we can adopt the modification where there is a set of assignments which is the minimum required. Each of these should take, say, a week. They are given out at the beginning of the week and the teacher can then, if he considers it necessary, take the class as a whole to explain certain things. Then by the end of the week everyone will have finished this assignment, and at the beginning of the next week the next assignment is given out. For those who finish the assignment before the week is up, a second file of assignments is prepared and as each one finishes the minimum assignment a supplementary one is given him. He works at this, dropping it at the beginning of the next week, and taking it up again if he has time after finishing the second minimum assignment. This method gets over the difficulty of not having the class together, and also allows the quick ones to get on with more work.

In using individual work methods, great care has to be taken in framing assignments. This is the crux of the whole method. Then, too, the teacher will often find that a certain amount of correction of assignments has to be done out of school hours, especially if a class is large. With a class of up to twenty-five this will not be necessary, but with larger classes it is not possible to get all the correction work done in school periods. Nevertheless most teachers will find that it is a much more satisfactory way of teaching and is worth the little extra time required for correction work. It has very good effects on the learning and working habits of pupils, makes them much more self-reliant, and also makes them think for themselves much more than the class teaching system does. They are activity learning and working all the time they are in school.

THE HEURISTIC METHOD

This method, as the name implies, is a method by which the pupil discovers things for himself. The pupil is put in the position of a pioneer, and he finds his way along the path of knowledge as did those who first discovered the facts, principles and laws which are now known to all. As a teaching method it was first systematized by Professor Armstrong as a method of teaching science. But it is a method of teaching which can be used in any subject. The scientific method is not of necessity confined to the subject of science.

The object of teaching by the heuristic method is not so much to teach facts, say of science or of history, or of geography, or of grammar, as to teach how knowledge of facts may be obtained, of how they can be systematized and of how they may be used. Pupils who are taught in this way learn to be observant, exact, and to think for themselves.

In teaching by this method the inductive process is largely used. Pupils are led to obtain information by their own active efforts, whether from books, from the use of apparatus, that is by carrying out experiments, or from the teacher. The principle which is the foundation of individual work methods is the heuristic principle.

The heuristic method uses the fact that a pupil's own experience is the basis of real learning. It is an activity method, where the pupil is mentally active all the time, just as are the inventor, the discoverer and the research student. It does not mean that every student is to be turned into a research student, but it does mean that all pupils get some insight into what scientific method is, and of how to tackle their work in all subjects in a scientific spirit and with a scientific attitude. They develop a critical attitude, and also the habit of weighing evidence, of exercising caution in accepting statements, even if they are in books or newspapers. Teaching by the heuristic method throws the whole weight of the teaching process on to the process of the growth of the mind rather than on the storing of knowledge.

Now it is obvious that we cannot use this method all the time. There are many occasions when pupils have to be given information, when it is not possible for them to find things out for themselves. But as a rule we lay too much stress on the giving of information, which may, or may not, be of use to the child later. There are numbers of things which he must know, and often it would take far too much of the limited time at the disposal of the teacher for the child to discover all these things for himself. But on the other hand all too often the whole time in school is taken up in giving information. A great deal of the pupil's time should be spent in working according to heuristic principles, whether it is in carrying out projects, in play-way, in scientific experiments, in working out assignments, or in any other method. We should endeavour to do as much of our work as possible according to this method. Work done in this way is really educating the child.

Examples of following the heuristic method can be found in most subjects. In language, when pupils collect a number of examples of a rule in grammar and then formulate the rule for themselves, they are using the heuristic method. In science it is used when experiments are done in the real sense of the word 'experiment'; that is, when the pupils do not know what the answer to the experiment is supposed to be. In history it is used when original documents are compared, and an account of an historical event is compiled. In civics, when the same thing is done from accounts in different newspapers, we are using the heuristic method. Whenever we are able to put the pupil into the position of a discoverer, who, by the way in which he uses the tools and information available, is able to reach a conclusion of his own, then we are teaching according to the heuristic method.

STORY-TELLING[1]

Every teacher should try to be a good story-teller. No skill will stand the teacher in such good stead as skill in story-telling. It may be granted that some lucky people are born with the gift of telling stories well, but at the same time it is something which we can all learn to some extent, and it is an art in which we can improve ourselves very greatly if we take pains. It is an art for which we never have to look far for opportunities for practice!

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[1] See W. M. Ryburn, *The Teaching of the Mother-Tongue* (Oxford University Press, 1957), Ch. XIII.

Every teacher is recommended to consult and study carefully one of the many good books available on story-telling. Nothing will repay careful study more. Here I wish to give a few hints which will direct attention to the main points to be kept in mind.

1. A story should be *told* and not read. If the story-teller is reading the story then he is not a story-teller, and the story loses a great deal of its interest for his audience. We all know that we prefer to listen to someone telling us something to listening to him read something out of a book. Children are even more interested in things being told than we are.

2. From this it follows that the teacher must know the story he is telling. It is fatal to have to stop to refer to a book in the middle of the story. This does not mean that the story is to be learnt by heart. It may, indeed, be necessary to learn by heart important parts such as the beginning and the end, and any sentences that have to be repeated, but the story as a whole should not be learnt by heart. The teacher should learn to tell his story. If he starts by learning it by heart he will never get out of the habit. It is better to tell stories from the beginning in his own words, except for such important sentences as may be learnt by heart.

3. This again implies careful preparation. The teacher must have a clear idea of the order of events. Again, it is fatal to have to break into the flow of the story with 'Oh I forgot to say that . . .'. The story must be carefully prepared.

4. The teacher should be interested in his story himself. He should himself 'feel' the story. If he can do this, his audience will also be interested.

5. In stories for young children there should be plenty of repetition of key sentences, and of sentences used in conversation that comes into the story. Young children enjoy this repetition. The teacher must be careful when he repeats a sentence or phrase that he repeats it exactly. He will soon be corrected if he makes any variation.

6. For young children there should be plenty of action in stories. They are not interested in descriptions.

> Stories for young children, therefore, should be told in terms of action and sense impressions. Up to the age of six years a child is most alive to moving things—engines, boats, horses and wagons, animals, boys and girls in action. Children lose interest when the action is interrupted by a long descriptive passage. In telling a story one can notice the drop in interest during descriptive and explanatory portions, and the flare-up of interest again when the action is resumed. Since the young child's own activities and experiences are the ones most interesting to him, the first stories should be about experiences familiar to children.[1]

7. The story should be told as vividly as possible. The words used should be simple and the meaning made quite clear. Wherever there is conversation it should be given in direct speech and not in indirect. The story should be told in a natural way with nothing forced about the delivery. At the same time the teacher should not be afraid to be dramatic as occasion offers. This should not be overdone, however. Descriptive words should be used when possible to emphasize sounds or happenings. For instance, it is much better to say, 'Trap, trot, trap, trot, the tonga went

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[1] R. Strang, *An Introduction to Child Study* (Macmillan, 1951), p. 210.

along the road', than just to say 'The tonga went along the road'.

8. When the teacher is telling the story he should use his power of imagery. He should have before his mind a series of pictures of what is occurring in his story. Then he describes one picture as he sees it in his mind. Then he goes on to the next picture and describes it, and so on. If in his mind there is a series of mental pictures his story will be vivid and arresting.

9. Attention must be paid to the age for which a story is suitable. It is no use telling pupils of 10 years of age a story suitable for five-year olds, or vice versa.

10. The teacher must have before him the purpose for which he is telling the story. Sometimes stories are told simply for enjoyment. At other times there is a definite educational purpose. The teacher may wish to train his pupils in thinking in logical sequence. He may wish to develop their imagination. He may be trying to develop their taste. It is possible of course to have more than one of these purposes in mind at the same time. But the teacher should be clear about what he is trying to do as his aim will affect the way in which he tells the story.

11. The teacher should remember that stories can be adapted. It is not necessary to keep close to the exact form in which he has read or heard the story in the first place. He must have his pupils in mind, and if changes in the story will make it more suitable for them or for the particular purpose he has in mind when telling it, then there need be no hesitation in his using his imagination and making suitable changes and adaptations. This does not apply to historical stories of course, except in so far as a teacher need not be bound to give every detail if a detailed story does not suit his purpose. It is also legitimate to use the imagination in telling historical stories

to supply background and conversation as long as these do not give a wrong impression.

12. Humour should not be neglected. Humour increases interest and helps work very greatly.

13. Well-known and familiar stories can be made fresh if they are told as though one of the characters in the story were telling it. Instead of the teacher standing outside the story, as it were, and telling it as an observer, he can assume the position of one of the important characters in the story and tell it as that character would tell it if he were relating the story to someone. It is good practice for pupils to do this too. For instance the story of the man and the boy with the donkey who tried to please everyone could be told as if the donkey were telling it. The story of Asoka and the Kalinga war could be told as if Asoka himself were telling it.

14. For younger pupils a story should suggest things to do, and should inspire them to action. It is noticeable that if small children are told such a story they will immediately start to 'play' the story. One of the uses of stories is to suggest lines of action to the listeners and opportunities should always be given for them to follow out lines of action suggested by the stories they hear.

EXPOSITION

The following are points which should be kept in mind when using the ordinary method of exposition, that is, of giving pupils new information and of explaining this new information to them. We have already considered this method when studying presentation in an informative lesson. The following are a few additional points to be kept in mind.

1. The aim of the lesson should be made clear to the class.

2. The teacher's exposition should be clear, to the point, dealing only with the particular subject, not involved but straightforward. There should be a logical sequence in his subject-matter as he presents it. This last point is important from two points of view. Firstly it helps the pupils to understand easily what is being given them. Secondly it gives them training in logical thinking and in setting things out logically in their own work.

3. The teacher's language should be simple. He must always be quite sure that *all* his pupils understand the words he is using and the terms he is using.

4. The teacher should not talk too quickly.

5. There should be plenty of recapitulation. The teacher must allow time for his slower pupils to assimilate what he is giving them.

6. The teacher must make good use of the blackboard to emphasize his main points, to give summaries, and to illustrate by sketches and drawings items that need elucidation.

7. There should be a free use of illustration. Illustrations may be pictorial or verbal. Pictures and maps and diagrams and charts are all essential. So also are examples and comparisons and instances, especially those taken from the life of the pupils.

8. As in story-telling, vividness of descriptions, explanations and word-pictures, add to the interest and to the ease with which an exposition is grasped.

9. There should not be too much material in any one lesson. No lesson should be over-loaded.

10. If in the lesson there are several sub-topics, one should be finished with before a second is taken up.

11. There should be ample opportunity during an

exposition for children to ask questions, and during any revision or recapitulation that is done, the teacher should ask questions to find out whether his exposition has been successful or not.

THE TEACHER

As we have already seen, teaching is a relationship. It is a personal relationship between teacher and pupil. One of the vital elements in teaching therefore is the character and personality of the teacher. The success of the teaching process will depend on the teacher, on his knowledge and skill, but especially on his general personality and qualities of life and character. In dealing with methods of teaching then, it is necessary to see how the character of the teacher will affect the quality of his teaching, and especially the characteristics which will enable him to use different methods to the greatest advantage. These characteristics will have a vital effect on his work, discipline, methods of teaching and dealing with children, and on their ability to learn.

1. In the first place the teacher must be just. Nothing destroys a teacher's real influence with his children more quickly than a tendency to be unjust. Children will forgive many faults in a teacher, but injustice destroys all their confidence in him. The reason is, that if a teacher is not just, children will never know how they stand with him. They have no feeling of security. And if children are to make real progress, if they are to have any joy in their work, they must feel secure. Children like to feel that they can depend on a teacher. If he is unjust they cannot feel this.

It is therefore essential that a teacher should strive with all his might to be scrupulously just. It is not always easy to be so. Often we do not have enough knowledge, and through ignorance are unjust. This is one more reason for every teacher's finding out as much as he can about his pupils. But children soon realize when a teacher is honestly trying to be just. And unwitting injustice will not occur very often, if we do honestly try to be just on all occasions. A habit of trying to be just will aid the teacher in discipline, and in his work. He will get more response from the class, and they will respect him. And above all, as I have said, they will feel secure.

Sometimes a teacher is tempted to have favourites in his class. Being human, teachers naturally like some children better than others, and dislike some children more than others. But it must be one of the main objects of a teacher in his relationship with his pupils, to avoid, as far as humanly possible, having special likes and dislikes for certain pupils. At least, if the teacher cannot help having likes and dislikes, he should not allow them to become too strong, and he should do his best to prevent himself showing his likes and dislikes in his treatment of his pupils. Pupils should not get the idea that one is treated leniently and another harshly. The teacher must try to be impartial.

An unfortunate habit which is often encouraged by teachers is that of tale-bearing. Often the public opinion of the school is not against it, and neither pupils nor teachers seem to realize what an undesirable thing it is. Admittedly it is sometimes difficult to draw the line between objectionable tale-bearing and legitimate giving of information to the teacher. Usually, however, in objectionable tale-bearing there is a vindictive element, a desire to get someone else into trouble, either to get revenge or simply from an unpleasant desire, which sometimes manifests itself, to see others in trouble. A boy is hit by another and runs weeping to the teacher. This is the sort of thing to which a teacher should pay no attention. Small things should be settled by the children themselves, and they should learn that it is only serious matters which are to be referred to the teacher. If there is a system of self-government with duly appointed officers for dealing with troubles that arise, then this matter of tale-bearing is more easily eradicated. But normally the children should understand that the teacher is not prepared to listen to tales. If he does, he will find a most unhealthy atmosphere developing in his class, and endless trouble gradually piling up.

2. Along with strict justice there must be a spirit of sympathy and understanding. We cannot have true justice of course, without sympathy and understanding. If the teacher's relationship with his pupils is to be fruitful and creative, and if his work with them is to be successful, he must cultivate this quality of sympathy and use his sympathetic imagination. He must learn to put himself in his pupil's place, to imagine his pupil's reactions to what is being done, and to different situations. He must try to remember his own feelings and thoughts when he was young himself. One of the great advantages of a study of child nature is that it helps us to develop this understanding. We need to know as much as we can about the nature of the child. We need to understand the difficulties he has to face. We need to know the best methods of helping him with these difficulties. We need infinite patience.

This quality of sympathy is the more important because it will enable the teacher to be a real friend of his pupils. It is well known that the relationship between teacher and pupils should be one of love and not of fear. Ability to sympathize with others and to understand them is the foundation of this relationship of friendship and love. This is the type of relationship which is really creative, and which will enable us to teach in the real sense of the word. It does not imply any weakness or softness when sternness is needed. But it does mean that our teaching will be inspiring.

3. A good teacher is keen on his work. He is anxious to increase his knowledge of his subject and of methods of teaching it. He is anxious to keep fresh and up-to-date. There is no need to labour this point though it has to be admitted that far too many teachers act as though they think that when their course of training has finished, all need for any further study has disappeared. No teacher can be really successful unless he has professional keenness, that is, a strong desire to increase his knowledge of subjects and teaching methods and a desire to make practical experiments.

4. Besides this professional keenness, a teacher should have what we might call vitality. When facing a class, the teacher who is obviously uninterested in what he is doing, and is simply going through a routine which has to be gone through, will not have a very successful time, nor is his class going to learn a great deal. It is the teacher who is enthusiastic and interested in his subject and in his pupils' progress who will help them to some enthusiasm and interest. His effect on his pupils will be much more beneficial than that of the uninterested teacher. His vitality will communicate itself to his class. This is not to say that every pupil will be filled with a burning enthusiasm for his work. But the general level of interest and enthusiasm in the class will be considerably raised, and in numbers of individual cases enthusiasm will be kindled.' This is one of the chief arguments in favour of class teaching. But its validity depends on the teacher. A dead teacher means a dead class. A live teacher means

a live class. There is an atmosphere of sincerity in a class where the teacher is alive and enthusiastic. He really believes in what he is doing. He is working honestly. And this sincerity of purpose is reflected in the class and in its work.

5. As has been pointed out, teacher and class will get on smoothly if the teacher pays attention to routine and to the organization of his work. A good teacher will always do his best to save as much time and energy as possible by having a good class organization whereby routine matters are carried out daily without fuss, and without necessity for fresh instructions every day. Attention to this side of the work will help greatly in discipline, and also in establishing a calm and secure atmosphere in the class.

6. In dealing with his class the teacher should also pay attention to matters of detail such as the neatness of his clothes, the tone in which he speaks, the clearness of his enunciation, his ordinary manners, and the general effect of such outer signs of his respect for his pupils. Children may not consciously notice untidy clothes, but such a defect does have an effect. In the same way, the teacher's way of speaking and tone of voice have their effect. A pleasant tone will help things, and a cross tone hinder work. Shouting does not help, while a clear calm voice will do so. As we have already seen, courtesy in the classroom makes for smooth running of things and pleasantness. There is no reason why teachers should not observe ordinary courtesies towards children and see that children do so among themselves. Example is better than percept here.

7. Finally a teacher should have a sense of humour. This is not something that can be cultivated, but it can be developed and used. A classroom without humour

is a very dull and uninteresting affair and, provided it does not go to extremes, humour is something we ought to cultivate in our teaching. Its effect and benefit depend on the fundamental friendly relationship between teacher and children. But given that foundation, it can make the classroom much pleasanter, and teaching much more effective. It should be remembered, however, that sarcasm and irony are not humour.

How to Judge a Lesson[1]

It is very salutary for us all to check up on the lessons we give occasionally. A teacher should always be keen to examine himself and his work. Only as he does so will he realize whether he is continuing to work according to the principles of education and teaching which he knows are right. Only as he does so, every now and then, will he keep his work up to the mark. Those who have to supervise work, need, in the same way, a standard according to which they can judge the value of the work they are watching. It is therefore a good thing for teachers and for supervisors to keep before them the various points and principles that should be watched when evaluating a lesson.

The following list of points has been compiled principally in order to help teachers to evaluate their own work. If teachers use some such scheme themselves, it is of far more value to them than if it is used by a supervisor who then tells them where their work is good, and where it does not come up to the mark. As a matter of fact we need both judgements. We need to get into the habit of criticizing our own work, and we need the help that we can get from the constructive criticisms of another. The following scheme may be of help to both teachers and supervisors.

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[1] This guide to judging a lesson has incorporated a number of points suggested by the Rev. E. L. King in his *What to Look For* series.

It is not expected that in every lesson all the points in the list should be taken into consideration. But certainly over a series of lessons they should all be taken into account.

The Lesson

1. *Preparation.*—Is there a lesson plan and how is it drawn up ? Is it used when the lesson is being given ? Is it adhered to mechanically or is it used with necessary freedom as circumstances require ?

2. *Aim.*—Is the aim of the lesson clear to the teacher and to the class ? Is the aim achieved by the end of the lesson ?

3. *Motivation.*—Is the lesson linked up with previous knowledge ? Is interest aroused at the beginning of the lesson ? Is the approach psychological ? Are the child's purposes, needs and psychological urges to activity utilized ?

4. *Presentation.*—Is the presentation of new knowledge logical and clear ? Is the language simple ? Does the teacher make sure that what he presents is properly understood and assimilated by the pupils ? Are the pupils led to think for themselves ?

5. *Expression.*—Is sufficient opportunity given for pupils to participate in the lesson ? What expression work is required during the lesson ? Is the expression work adequate ? Is creative work encouraged in any degree ?

6. *Methods.*—Are the methods employed in the lesson suitable for that particular lesson ? Are they properly

used? Can improvement in method be made? If so, how? What causes of wrong use of method can be detected?

7. *Equipment.*–What use is made of pictures, maps, diagrams, charts or other illustrative material? Is any ingenuity shown in this direction? Was the necessary equipment prepared properly beforehand?

8. *Questioning.*–How is questioning carried on? Is the right type of question used? How are questions from pupils dealt with? Are questions from the class encouraged?

9. *Recapitulation.*–Is there sufficient recapitulation? Is it done at the right place?

10. *Class Management.*–Is the blackboard used sufficiently? Is it used to best advantage? If not, what improvements can be made? Is the blackboard in the right position? Are seating arrangements as good as possible? Is care taken to see that the whole class participates in the lesson; that is, are questions asked of all or only of a few?

11. *General Effect.*–What is the general effect of the lesson on the class? Is the class interested right through the lesson? Do pupils seem to make an advance in knowledge or skill? Is the class obviously relieved when the end of the period comes?

The Teacher

1. How does the teacher speak? Does he speak too fast or too slowly? Is his enunciation and articulation good or slovenly? Is his general delivery monotonous or interesting? Does he shout too much, or speak in too low a voice? Does he use words the pupils understand?

2. How does the teacher read? Is his phrasing of words, his emphases, good or bad? Does he time his reading

well, that is, having pauses now and then? Does he read too fast? Is his reading natural?

3. How does the teacher tell a story? Does he seem interested himself in the story he is telling? Does he tell the story in a natural pleasing way? Is his vocabulary suitable for the story and for his pupils? Does he give all necessary detail? Is there any dramatic effect in his telling of the story? Does he depend on a book, or does he *tell* the story?

4. How does the teacher stand or sit in front of his class? Is he slovenly or alert? Is he smart in getting the lesson started? Is any time wasted during the lesson?

5. What is the attitude of the teacher to the class? Is he friendly? Does he usually scold or is he encouraging? Is he sarcastic? Is he humorous? Is he sharp or gentle?

6. What is the teacher's discipline like? Is it slack or firm? Is it founded on fear of punishment? What kinds of punishment are given? How can discipline be improved?

A SELF-RATING SCHEME FOR TEACHING

There will be no very general agreement on a scale of the qualities that ought to be found in a good teacher. And there will be still less agreement on the order of importance of qualities. However, it is a very useful exercise for the staff of a school to try to make out a list of the chief qualities required in a teacher and to attempt to place them in an order of importance. Each member of the staff can make out a list of from twelve to fifteen qualities and then these qualities can be tabulated, the one with most votes being placed first, and so on. The order may be finalized after a general discussion. An exercise such as this leads to some profitable thinking. The list agreed on by one staff was as follows:

Self-control
Enthusiasm
Sympathy
An experimental attitude to life and work
A sense of vocation
A sense of humour
A love of justice and sensitiveness to injustice
Independence of mind
Sincerity
Dependableness
Patience
Resourcefulness

When a list is agreed on and adopted, then teachers can proceed to rate themselves according to the list. To do this, probably the best way is to take a five or seven point scale.

Very poor Poor Average Good Very good

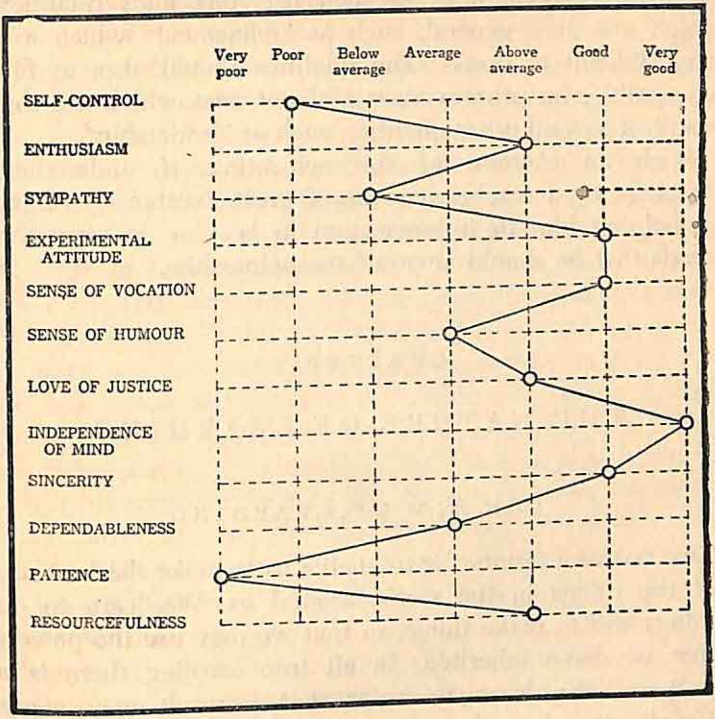
or

Very poor Poor Below average Average
Above average Good Very good

Sometimes numbers 1, 2, 3 and so on up to ten are used, but this is not as satisfactory as the five or seven point scale suggested above. It is impossible to evaluate so exactly as numbers demand.

The best way for a teacher then to rate himself is to make a graph.

A teacher can then plot his own graph. He may first, for practice, plot the graph of some good teacher whom he knows. After plotting his own graph, if the friendship is sufficiently strong to stand the strain, he may get one of his friends to plot his graph for him so as to see



how he appears to others. This judgement by another may be secured without any danger of unpleasantness, if the unused graphs with the name of the teacher to be assessed are given out by the headmaster to various members of the staff. No one will then know who has plotted his graph for him. The headmaster may keep a file of such graphs of the members of his staff, which he has plotted himself, and see how they have to be revised from year to year.

In adopting or preparing a list of qualities, for such work, care has to be taken that the qualities are as definite as possible. Sometimes in such lists one finds qualities which are very general, such as 'refinement which are very difficult to assess. The qualities should also, as far as possible, be primary ones and not ones which are the result of several other qualities, such as 'leadership'.

Such an exercise as this self-rating, if undertaken seriously by a teacher, can be of great assistance to him, in helping him to improve, and in keeping in view the ideals that he should always have before him.

CHAPTER V

THE NATURE OF LEARNING

The Aim of Learning

The aim of learning is to enable us to make the best use of the things in the world around us. We learn to do things and to make things so that we may use the powers that we have inherited. In all true learning there is a purpose. We learn in order that a result may come. Usually the desired result is ability to use something in our environment. But whatever the result may be, we learn in order to bring about a result, and that result is one which we want. Thus purpose plays a big part in learning, and purpose, as we know, is intrinsically connected with our instinctive powers. We wish to use these powers. In order to use them to the best advantage, in order to satisfy our instinctive drives, we have to manipulate our limbs, and our bodies, we have to use our mental powers, and so we learn. The aim of learning is to enable us to use our powers to the best advantage. This involves many complicated processes, and sets in train long series of actions, but always we can trace this basic aim in all the different kinds of learning.

For instance, a chicken, when very young, has to learn to pick up grain. It does not know the best way to do this. But it makes efforts because it is hungry and desires to get food. It makes some mistakes but soon finds the best way to pick up grain. We say it has learnt to peck. It did so in order to enable it to satisfy an instinctive urge, the urge of hunger. Again, a boy sees that another boy has a kite. His acquisitive instinct begins to function and he wants a kite. He has no money to buy one, so he starts to make one for himself. To do this he has to learn to use his hands and certain tools. He then wants to fly the kite, and again learns how to do so, partly by trial and error, partly by watching how others do it, and perhaps by getting some instruction. But the aim of all his learning is to carry out his purpose, to satisfy his desire. Or again, a boy wishes to pass an examination. To do this he has to learn how to speak and write English. Hence he learns.

Sometimes, it is true, learning takes place in school without there being any real purpose, that is, any purpose which the child feels to be his own. Learning done in order to pass an examination is learning to realize an incidental purpose. The examination is a necessary evil in order to get on. But it is not a real purpose in the life of the child. Passing the examination is not a part of his struggle to adjust himself to his environment or to master that environment, except in so far as passing it puts him into a better position in life and helps him to command more resources. It is, however, an artificial thing. Whereas, if he is taught well in school and learns to think and how to meet everyday situations, his learning has an intrinsic value, and will aid him in adjustment to, and mastery over, his social and physical environment. Learning often takes place in school simply from fear of punishment. There is here, of course, a purpose: namely, to avoid punishment. But this again is not a real purpose. The learning that takes place because of this purpose will not be of great value, or at least not of such great value as that which takes place because of a purpose realized by the child himself.

The aim, then, of learning is to carry out a purpose, to satisfy a desire. This purpose is always connected with the use of some instinctive power, with the use of the energy with which we are endowed at birth. We learn in order to be able to use our energy and powers in the best possible way, the way which will give us most satisfaction and will enable us to develop, through adjustment to, and mastery over, our environment.

THE LEARNING PROCESS

What do we do when we learn? In its simplest stages learning is a matter of making a response to a situation or modifying a previous response in order to bring about an improvement. It is a matter of selection. The child sees several things which he can do in the situation in which he is placed. He decides to do one of these, and finds that he is not successful. Then he tries another, and then perhaps another, until he finds the one which gives him the result he wants or at least proves to be more hopeful than the others. He may do this through a process of trial and error, or he may use his powers of thinking to correct himself, or he may be given instructions which help him. But as a result of his trials he finds the best response or way of acting, and then concentrates on that; that is, he repeats that particular action. Then we say that he is learning the right way to act in this particular situation, to do the particular thing he wants to. Thus learning is first selection and then practice.

For example, we have a boy who wants to make a stool. He has to learn how to use a plane. He makes an attempt with the blade in one position. This is his response to the situation which requires that a board be smoothed. He finds he has the blade too far down. Then he moves it higher up. This is a new response. Again the result is not satisfactory. So he moves the blade into a new position and now finds that the result is satisfactory. The next time he comes to plane a piece of board, he does not have to make three responses. He at once puts the blade in the right position. He has learnt where to put it. Thus his learning has been a matter of selection of the response to the situation, which gives the best results. At first perhaps he cannot get the blade into the right position without a good deal of trouble. After doing it several times he learns to do it without trouble. Thus, after selecting the right response, practice completes his learning in that particular matter.

In the same way a child learns to read. He comes to a word he does not know. He makes several responses, that is, says several words before he gets the right one. Then when he gets the right one he probably practises it several times. He selects and then practises. The response he selects is the one which gives him satisfaction, that is, which helps him to carry out his purpose.

Learning depends on this power that human beings have to make different responses to situations and to select one of those responses. This is where the instinctive powers of man differ from those of animals. Animals usually make only one response to a situation, and any learning they can do is simply a matter of trial and error.

But man can use his reason to help him to select the right response; that is, the most advantageous response. Thus as children grow up, they do not have to make different responses when a situation comes before them. They can think what the result of different responses will be, and without actually making the responses they can select the one which they have decided will be of most use.

It will be seen that in all those parts of life where we take advantage of habit, learning will result in a particular response always being made to a particular situation until it is made without our thinking about it. When a child first learns to put on his own clothes he has to think about it, he makes mistakes and has, sometimes, to take things off and put them on again. But gradually, as he learns the right response, that is, learns to do things in the right way, his actions, we say, become habitual. This simply means that the right response follows the stimulus without his having to think about it. Finally he makes the response to the stimulus while he is thinking about something else altogether. We can thus see that in all things where habits are to be formed it is very important to help the child to select the right response *from the very beginning*. Otherwise he will form habits which are not useful or even bad. This is true in the realm of character. It is also true in the realm of handcraft work and also in ordinary school subjects. For instance it is very important to see the children select the right response to the stimulus when pronouncing words. Wrong responses growing into habits here are very difficult to eradicate later on.

To take first the case of developing a skill (learning how to do something), we have the following process.

1. *Stimulation.*–The situation in which the child finds himself in some way rouses the desire to act in a particular

way. He is interested. He feels the urge to use his instinctive energy in some particular way. For instance, the boy wants to *make* a boat. His creative urge has been aroused. In some way or other his environment has given him a stimulus. We know how important that matter of stimulation or motivation is in all teaching. Without it a lesson is hard going for both teachers and pupils.

2. *Selection.*—The stimulation rouses to action, and this may take many forms. These are the responses. The child then selects what seems the best or most hopeful response; that is, the response which looks as if it would help him to do what he wants to do.

3. *Action.*—Having selected his response, that is, his line of action, he has then to act. He must *do* something. He can never learn to make a boat by sitting and listening to his teacher telling him how to do it. His teacher may help him to decide on what response to make, but the child must act *himself*.

4. *Reconsideration of Response.*—The child may find the response he makes is not as fruitful as he thought it would be. His selection has not been right. His action tells him this. So he then reconsiders his selection in the light of the experience he has got, and makes a new selection. A new action ensues, until he is sure he has the right response. The teacher's help will all along be available to him as he sets himself right.

5. *Repetition.*—Having finally decided on the right response, he has then to practise. Thus in learning to write, after the child has learned the right way to hold the pen, and the right way to make the strokes, he has to keep on practising.

6. *Habit.*—Finally, after much practice, a habit is formed, and the child can perform the skill without effort and without thinking about it. It may be, of course, that his

habit is not a very good one. In other words the degree of skill he has attained is not a very high one. If not watched carefully by the teacher he may also have made wrong responses habitual. The whole process has then to be gone over again, but it is obvious how much more difficult it is to correct the badly developed skill, than to develop it freshly. The nerve centres have been affected and the child naturally reacts in the ways that have become habitual by practice, and to change these nerve paths is very difficult.

In the case of learning, which is the assimilating of knowledge, we have a somewhat different process, which is as follows.

1. *Sensation.*—Sensation is the awareness we have of objects in our environment through our senses. We see something, or hear something or smell it and so on. This is the way in which we describe sensations. So the first thing in learning, that is, in gaining knowledge, is sensation. This involves careful observation.

2. *Perception.*—Following sensation comes perception, which means interpreting sensation in the light of previous experience. A child sees a horse for the first time, and calls it a big dog. It has seen dogs before and knows something about them, so interprets this new combination of sensations in the light of what it already knows. This, of course, is done quite unconsciously by the child.

3. *Association.*—The knowledge gained through sensation and perception is then associated with what the child already knows, and is made part of the child's mental stock. It becomes fixed in the memory and in the life of the child. Relationships between different things are established.

4. *Generalization* (Conception).—This simply means the forming of general ideas and follows on from perception.

Generalization and association will often be going on at the same time.

5. *Use.*—Finally comes the use of the knowledge gained. Generalizations are tested out in action and their truth established. Knowledge gained is expressed in action and thus made a real part of the make-up of the child. No knowledge is really part of us until we have used it. We cannot say we know a thing until we have put our knowledge into action in some way or other. Hence the importance of expression work in all learning.

It will also be noted that the beginning of the process is of great importance. Accurate knowledge depends on accurate sensation. If we go wrong there then the whole process will go wrong. Hence it is very important to train the senses of children. Accurate observation not only with the eyes but with all the senses is essential to all accurate and satisfactory learning.

We must also remember that in this type of learning purpose also plays a great part. We observe the things we are interested in. Those things which do not appeal to us, which have nothing to do with our purpose in life, we let go. Hence purpose will influence this whole process of learning. Not only will it motivate our learning, but it will determine what we learn and how we learn it. It is difficult to over-estimate the importance of purpose in the learning process, of whatever type of learning we are thinking.

To sum up, we have the following ways in which children learn and the following different types of learning.

1. What has been called *pragmatic learning.*

> The learning process, at least during the first months of the child's life, is almost exclusively, if not completely, confined to gaining knowledge through the practical necessities that confront him. This is a

> fundamental law of learning for child and brute alike, and covers the widest ranges of racial and individual experience. It is for this reason that knowledge is termed practical or pragmatic. It becomes an instrument by which the proper adjustment is accomplished. Thus learning develops as there is a need and in direct response to this need.[1]

· Learning here is a matter of the child finding how he can use the things in his environment, and how he can use his own limbs and body. This is done at first by what we call trial and error. The child tries first one way of acting and then another, till he strikes the way that satisfies him; that is, that enables him to fulfil his purpose. This method is soon modified by the use of the intelligence, although it is still found in adults when they are confronted with a puzzle.

This type of learning is that of simple skills, the formation of bodily habits and habitual ways of response such as we have in learning to write and to use tools.

2. We also have *imitation.* There is in all children this tendency to express their urge to action through imitation of what others do and say. It is probably due to the working of the herd instinct. Imitation may be both conscious and unconscious. With small children it is usually unconscious. That is, they copy what others do, without any conscious purpose. In school, however, imitation is often conscious as when the child consciously imitates the way the teacher writes or reads or draws a map. The type of learning that is the result of imitation will usually be the same as above, but there may also be a perceptual type of learning.

3. *Perceptual and conceptual learning.* This is the learning which follows from sensation which is interpreted. Then the interpretation is generalized. Most of what we

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[1] S. S. Colvin, *The Learning Process* (Macmillan, 1938), p. 16.

term academic learning is done in this way. The child sees an object, understands what he sees, and then puts it into a class. Two types of learning are involved in this, the perceptual and the conceptual. In this way we learn general ideas, rules, definitions and principles.

4. Learning by *association*. This way of learning simply means linking up one idea with another and so with previous knowledge. In this way ideas and facts are remembered and a body of knowledge is built up. This type of learning is called the associative type, and in this way we learn verbatim information and remember ideas and facts.

5. *We learn by doing* as has been emphasized many times. This type of learning is the active type. Learning takes place through action and this method of learning is, or should be, used in connexion with all kinds of work.

6. We must never forget that children *learn through play*. This again applies to all kinds of work. Children learn better and more thoroughly when work is done in the spirit of play than at any other time. Play is simply an attitude to life which arouses interest, stimulates responses and ensures the exercise of all the powers on the work in hand.

FACTORS INFLUENCING LEARNING

There are various conditions of life and school which have a very definite effect on our pupils as they learn. If we wish to help them to learn and to make the most satisfactory adjustment to life, it is necessary for us to keep these conditions in mind. The following are the most important.

1. Learning depends on heredity endowment.

The inherited instinctive tendencies vary in strength from child to child. The native intelligence of every child is different from that of every other child. Children vary also in particular abilities. The clever child can profit more from past experience than can the dull one. He can see relationship more quickly and so can learn more easily and better. One child learns easily one particular type of subject-matter, which is connected with his particular ability, while another may find the same subject-matter difficult and other things easy. Hereditary endowment cannot be changed nor increased (though it may be used and developed). Ability to learn and the rate of learning are therefore conditioned by this endowment.

2. Learning depends on the physical condition of children.

Learning is affected by bodily weakness, chronic illness, malnutrition, fatigue and general health conditions. The home environment, conditions of living, ventilation, lighting of the home, the amount of work (other than homework) that has to be done at home, the distance that has to be walked when coming to school, all these affect the rate of learning and the general response of the child. In this connexion we have also to remember that the bodily condition of the teacher affects the rate of learning of the child, since it affects the way in which a lesson is taught, and the relationship between teacher and child.

3. Learning is affected by the social situation.

The home conditions of pupils and the attitudes of parents towards school work have an important effect on the child's readiness and eagerness to learn. Where the home influence is such that it encourages interest in learning and in school work generally the child will learn better, while adverse conditions in the home and lack of interest in parents will have the effect of lessening the interest of the child and so of retarding learning.

The attitude of the social group to which the child belongs will also influence learning one way or the other.

If the members of a group are generally keen and interested, the learning of each member of the group will be helped. If the group is mainly composed of those who have little interest in school work, the learning of all members of the group will be adversely affected. The common attitude of the group will affect all its members favourably or adversely. The same is true of the large social units of the class and the school. If there is a tradition in a school of interest in learning, that tradition helps to mould the attitudes of all who attend the school and learning is helped. Where there is no such tradition or where there is a contrary one, the social influence of the large group is a hurdle which has to be overcome and hence learning is made more difficult.

4. Learning depends on stimulation.

We have already seen the importance of motivation in connexion with teaching; that is, when we consider the process from the teacher's point of view. Exactly the same considerations apply when we look at the process from the pupil's point of view. A child grows and develops mentally and physically and spiritually as the different environments in which he is placed make demands on him. School is an artificially organized environment. The child learns as this environment makes demands on him, that is, as it arouses his interest. The guidance of the teacher is mainly a matter of giving the right kind of stimulus to help him to learn the right things in the right way.

Stimulation will be given in various ways, and all that has been suggested in connexion with motivation applies here.

5. Learning depends on the goal set before pupils.

Each child should have a definite goal set before him, a standard which he is expected to reach. This should be done both in the sphere of gaining information and in that of gaining skill. For small children the goal or standard should be one which be quickly reached. Then another will be set. For older ones more distant goals may be set. But there should be definite goals which the child clearly envisages and clearly understands, if we wish to stimulate learning. Pupils should be given opportunities to check their own progress against such standards, as they make progress. When work is marked or tests given, the children should always be told their marks. As we have already seen,[1] marking should take other things into consideration besides the objective standard reached in the work done.

> In correcting exercises we should emphasize success by marking somewhat more leniently and criticizing less severely in the early stages of practice. The standards can be raised progressively as proficiency and confidence develop. To mark and criticize savagely at the beginning is like pinching out the top of a tender young plant.
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> This last rule was well exemplified in a learning experiment undertaken by a number of American university students. One section of the students believed that they had reached the limit of their ability to improve, and, more or less unwittingly, ceased to try further. The supervisor thereupon 'arranged' the scores of that section to show an apparent increase. At once the students concerned renewed their efforts and went on to catch up and actually beat the artificial improvement.[2]

As this experiment shows, not only is it important to take other conditions into account besides the objective value of the exercise when marking, but it is also important to avoid complacency in the pupil. The pupil should never be allowed to feel that there is no room for improvement in his work, that there is nothing more for him to learn.

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[1] See pp. 60-1.

[2] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941), p. 124.

> A little learning is a dangerous thing in so far as it may make a child content with what he has accomplished. The child's felt need for a skill is decreased once he has obtained enough proficiency to accomplish his immediate purpose. It is important, therefore, that as soon as the child begins to acquire skills, he should set for himself suitable specific standards of accuracy and precision.[1]

6. Learning is helped when pupils are given an active share in determining the goal and in planning how to reach it.

When children are allowed to help in deciding what they will do and to have their say in how they shall carry out the tasks they take up, then naturally they take more interest in what they are doing. Moreover, they are in a better position to understand how different pieces of information and different skills can be of use to them. They understand how much things can help them to do what they want to do, and hence learning becomes easier. They understand the relation between what they want to do and what is presented to them. The pattern of the work becomes clearer. Not only is this the case, but their sense of purpose stimulates them to learn the necessary skills and to gain the necessary information, and takes away the sense of drudgery. The children feel that they are doing something which they want to do, in which they are vitally concerned, and not something which is imposed on them. This condition is most favourable for learning.

7. Learning is helped by associating things as parts of a total situation.

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[1] R. Strang, *An Introduction to Child Study* (Macmillan, 1951), pp. 145-6.

As Thorndike has pointed out, we should put together things which we want to go together. The fuller an experience can be made within the limits of the child's ability to assimilate it, the more fruitful will be the learning. Such association should not be artificial or forced, however. It should arise naturally. This is one reason for the success of the project method. In carrying out a project many different things are brought together as parts of one process, and their connexion is easily understood by pupils.

8. Fruitful learning depends on guidance and instruction.

Pupils have to be guided in selecting the best response to their environment. They have to be shown why one response is better than another. They have to have guidance, when they begin to practise after the first selection. This is particularly necessary in the right methods of using tools, whether those tools be words, pen, hammer or saw.

One of the best ways of guidance, especially with smaller children, when a skill is being learned, is by demonstration of the right way to do a thing. Nandalal Bose, the famous artist of Shantiniketan, when teaching children to draw often watched what they were trying to do, then himself drew what they had been trying to draw, alongside their own efforts, and went on, saying nothing at all. The demonstration and the comparison was left to do its own work and to give the guidance necessary.

9. Learning is affected by the emotional condition of pupils.

Fear and feelings of insecurity and of inferiority militate against learning. Emotional conditions are usually brought about by the attitude of older people towards the child. Praise should always be used as extensively as possible by the teacher, as it rouses self-confidence and stimulates further effort. It works against feelings of inferiority and against fear. Praise and approbation for work well done or well attempted, helps to build up confidence, self-respect, self-reliance and hope. The child is given the satisfaction which, as we shall see, is essential for all permanent learning. But if a child is continually given the idea that his work is bad, that he cannot succeed, and that he has no ability, he will soon develop all the unfortunate characteristics which result from a feeling of inferiority. This is not to say that the teacher must never find fault and never censure a child for poor work. But praise should be given whenever possible and whenever the teacher feels that the child is doing his best and working well. As a rule we are too free with fault-finding and too chary with our praise. The child's learning suffers when this is the case.

10. Learning is affected by the suggestions which the child receives.

Suggestions come, as we have seen, from the social group and have a strong effect. But suggestions come also from the teacher. The teacher can give the child the suggestion that he can learn and that learning is worth while. Although the child will be unconscious of what is going on, such suggestions will have a powerful effect on his attitude to work and on his willingness to make an effort. On the other hand, if the teacher is unwise enough to tell a pupil that he is too dull to learn, then the suggestion implanted will make it more difficult for the pupil to learn, quite apart from what his real ability may be. Encouragement conveyed by suggestion will have a considerable effect on the learning of the child.

The suggestion given by the physical environment in which the pupil works will also affect his learning. A room which, by pictures, charts, maps and models, suggests that it is a place where history is learned will in itself be an aid to learning and will help to determine the attitude of pupils. The atmosphere in which pupils work can be helpful for learning or the reverse.

11. Learning is always the result of a total situation.

We have considered various factors separately, but in life these factors do not function separately. We have always to take the whole situation into account. This situation includes the native ability of the child, his physical condition, his environment and its effects, his purposes, desires, ambitions, his emotional development, his previous experience, and the guidance and instruction he has had.

The more the total situation in which the child finds himself when in school, is related to life, the more fruitful and permanent his learning will be. For example, problems in arithmetic ought to be in a practical form such as the pupil will meet with in his everyday life. History should be related to present-day problems. The total learning situation should not be, as it were, suspended in a vacuum, but should be, as far as possible, a life situation.

CHAPTER VI

THE LAWS OF LEARNING

As WE STUDY the learning process and the way in which children, and adults also, learn, we are able to see certain principles or laws which are usually followed when people learn. We cannot claim that every time anything is learnt by a child, these laws, or all of them, are followed. But these laws give us an idea of what generally happens, and it is true to say that if these principles are followed, then learning will be more satisfactory, and the results of work much better, than if they are disregarded. A knowledge of these laws of learning should help us a great deal in planning our lessons, and in helping our children to make good progress in their work. Following them will make school and school work easier and more pleasant both for our children and for ourselves. It is therefore important for us to understand, as well as possible, the laws of learning; that is, how our children normally learn.

1. The first law is the *law of readiness*. This can be stated as follows. Learning takes place best when a person is ready to learn. When a stimulus is present then learning follows naturally. When a person is thus ready to act, acting gives satisfaction, but being prevented from acting causes dissatisfaction. When a person is not ready to act, is not stimulated, then being made to act causes dissatisfaction.

This is really just another way of saying what we have already emphasized numbers of times, that everyone has urge to activity, and that there are various channels through which this desire to be active works. To act when these instinctive tendencies are aroused, that is, when a person is stimulated, gives us satisfaction. To be prevented from acting at such a time causes annonyance. We learn best then when we are ready to act, and that means that we learn best when our instinctive tendencies have been aroused and the urge to activity is making itself felt. We must remember, of course, that when we use the word act we are thinking of mental acting as well as of bodily acting. When an instinct functions, the whole personality functions.

A small boy is always ready to play. The teacher tells the class that they are going to have a game. In so doing he stimulates the class. They are ready for action. In order to play the game it is necessary to get some things ready, such as some sticks which may have to be cut, or some words have to be written on pieces of cardboard.

Because of the children's readiness to act, they eagerly do what has to be done, even though there may be a little delay in carrying out their purpose while they learn to make properly whatever has to be made. They learn because they are ready to act.

Or again, the teacher may appeal to the instinct of pugnacity and arrange a competition in work. Again the children are stimulated. They are ready for action, physical or mental. When they find that to take part in the competition they have to learn how to spell certain words, they willingly learn them, and in the same way will learn whatever is necessary for success in the competition.

A class is asked to put on a play. This appeals to the self-assertive instinct and to the creative urge in the children. They are thus ready, stimulated. As a result they learn a great deal by heart, and make a great many things in order that the play may be a success.

Thus we see that the law of readiness is just another way of expressing the truth that we had already considered when we were studying the matter of giving lessons. We must prepare the minds of our children for what we want them to do and to learn. We must stimulate our children if they are going to learn well and with satisfaction to themselves. The more we can use the instinctive tendencies and effect their sublimation, the better will our children learn.

There is a term sometimes used in discussing this law of readiness, the term 'mind-set'. Now mind-set simply means a general readiness of the person for a certain type of activity. The readiness for one particular action which we have been discussing, is really the result of a mind-set. Mind-set is broader and more general than readiness.

A boy may have a mind-set for learning to play a certain game, say hockey. This is his general attitude of mind.

He wants eagerly to learn this game. It is for the time being his general purpose. He is therefore ready to learn anything connected with the game. He is ready to learn how to hold the stick, to learn how to use it, to learn to keep his position in the team, to learn how and when to pass the ball. These are all smaller purposes which he is ready to carry out in order to achieve his greater purpose. Thus psychologically there is no difference between the nature of mind-set and readiness. The one is concerned with the larger purpose and the other, readiness, with the smaller subsidiary purposes.

For example, we have a mind-set to pass a certain examination. We are therefore ready to learn various subjects in which we have to pass if we are to pass the examination as a whole.

2. The second law of learning is the *law of maturation*. There are periods during their development when children are 'ready' for learning different subjects and skills. At such periods, training and instruction produce very rapid gains in learning as compared with other periods.

This is really a particular instance of the law of readiness. There is an increasing amount of evidence to show that at certain definite stages in their maturation, children are ready to learn to read, to write and to learn various arithmetical processes. We know that there is a definite stage of development at which a child will learn to walk. To try to get him to walk before this stage has been reached not only gives no advantage but is definitely harmful. It is the same with talking. When the period for learning to talk has been reached, in a short time the child learns a surprising number of words. He is deeply interested in saying words, and instruction at this period is far more effective than before this time, and, as a matter of fact, than ever afterwards.

In Denmark the same result was noticed. Many pupils in the Folk Schools make very rapid progress although they come to the schools without any other teaching than they received in the elementary schools which they left at the age of 14. 'Experience proves however, that the same amount of information which it takes the half-grown youth–dozing on the school forms–three to five years to learn, can be acquired by adults who are keen on learning and who have done practical work, in the space of three to five months.'[1]

Periods of rapid learning are usually the result of some aptitude approaching maturity at the time. It follows then that when we give our pupils work to do, it should be given with their degree of maturity in mind. A great deal of experimenting needs to be done in this country to find the times of maturity for different subjects and skills. We probably try to teach ordinary arithmetical processes at too early an age. But as far as our knowledge goes we should take into account the readiness provided by maturation.

3. The third law of learning is the *law of purpose.* The stronger a person's purpose to do a thing the greater is his readiness to learn what is connected with carrying out his purpose, and the greater his lack of readiness to do anything that is not connected with achieving his purpose.

It is not necessary to say much about this law. From all we have been considering we have seen what a great place purpose plays in our lives and in all teaching and learning. We have just seen how we are made ready to learn by the stimulating of our instinctive tendencies, and there is always a purpose before us, consciously and unconsciously, when our instincts are functioning. Hence if we wish to get our children into a state of readiness for learning, we shall try to see that they have a purpose consciously before them. If they are carrying out a purpose, or wish to carry out a purpose which they really feel and appreciate, then they will be really ready for acting and learning. The more we can utilize the purposes of our children the more satisfactory will our work be to ourselves and to our children. This is the basis of the project method.

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[1] H. Begtrup, H. Lund, P. Manniche, *The Folk High Schools of Denmark* (Oxford University Press, 1949), p. 134.

4. The fourth law of learning is the *law of exercise*. We learn what we practise. We do not learn what we do not practise. When we act or when we think, there is action in the nervous system. A modification of certain nerve patterns takes place. The result is that it is easier for us to act in that way or think that thought the next time. The connexion between stimulus and response has been established. The oftener we act in the same way the better established that connexion between stimulus and response becomes, and the result is that we find it easier to do that particular action. This goes on until we say that an action or a mode of thought becomes habitual, and we act and think without paying attention to what we do.

Now this is something which is well known to everybody. But it is something to which we do not always pay sufficient attention. If we wish our children to learn properly we must give them opportunities of practising or establishing the connexion between stimulus and response. When the child has first learned that four times three are twelve, he has to think and try to remember when again asked what four times three are. Gradually, if we give the child enough opportunities for repeating this line of thought, of making this response, his answer becomes automatic, and we say he has learned his table.

Similarly with actions, we learn to master our environment only by repetition.

Repetition should be continual but not too prolonged at any one time. It should be for short periods often repeated. This is why in school we have periods for all subjects every week, and do not do a great deal of work at one subject and then drop it for a term or a year. We keep on working at it steadily, doing a little every day or every week and so getting frequent repetition and ensuring steady assimilation of what is learnt.

5. *The law of satisfaction.*—We learn things and to do things that bring us satisfaction and we learn not to do things which bring us annoyance.

We can put this another way by saying that the connexions between stimuli and responses become strong when we get satisfaction from the responses but remain weak or are not formed at all when we get annoyance from the response.

If there were only the law of practice then we would continually learn the wrong ways of doing things. When we begin to learn to read, we read words wrongly far oftener than we read them correctly and yet we gradually learn to read them correctly even though we seem to get more practice at the incorrect way. In the same way, when we are learning to play a game, at first we hit the ball wrongly far oftener than we hit it rightly; that is, we get more practice at the wrong way of doing things than at the right way. Why then do we learn gradually to do it the right way?

The reason is in this fifth way, namely, that we do not learn things that give us no satisfaction. When we do things wrongly, for example, when we read a word wrongly, or when we hit the ball wrongly, we get no satisfaction, and so we do not learn to do things that way. The connexion between the stimulus and the response is not established. But when we do it correctly, then we feel satisfaction and the connexion or bond between stimulus and response is strengthened so that we are liable to act in this same way the next time the stimulus occurs.

From this it follows that when teaching we should be careful to see to it that child feels pleasure and satisfaction when he does something the right way. In doing so we are helping him to learn. And it is also true of course that we must try to see to it that when a thing is done wrongly, the child feels dissatisfaction. This feeling will arise naturally if the child is trying to carry out a purpose, and finds that the wrong way of doing things prevents him from achieving his purpose. In learning to play a game we do not usually have to bring in any extraneous result to cause a feeling of dissatisfaction. The child realizes for himself that the way he is acting will not help him to play the game. But often in school it is necessary for us to bring in other elements to make sure that wrongly done work will be accompanied by feelings of dissatisfaction. As we have seen, by far the best way of doing this is when the dissatisfaction is intrinsic, and follows naturally from failure to carry out a purpose. But sometimes we have to use various forms of punishment, more or less severe, as circumstances seem to demand, in order to associate unpleasant consequences with a course of action which is wrong, and which we do not wish to become habitual with the child. Often the disappointment of the teacher is enough, or the realization that he has fallen below the level of the class will be enough to make the child feel dissatisfaction. The teacher will have to take measures according to the individual natures of his children and according to circumstances. But he must always remember that work done in the right way should bring with it satisfaction whether intrinsic or attached, and that work done wrongly ought in the same way to bring feelings of dissatisfaction. Only so will learning take place along right lines. There is no need to point out how important this is in the primary school stages where so many habits are being formed, since so much in the future life of the child depends on a good start.

This law does not mean that children must get into the habit of doing only those things that please them, and are never to be expected to do anything that causes trouble, or brings pain, or causes difficulty. The feeling of satisfaction may be caused by slow progress towards a distant goal, and the gradual achievement of a great purpose. To reach this goal and to accomplish that purpose, the child will be ready to endure pain and trouble, to do monotonous and dull work from which he gets little pleasure. But he gets his satisfaction as he realizes that each step he makes takes him nearer his goal. In the case of small children it is necessary for satisfaction to be immediate. But, as children grow, the necessity for this immediacy disappears, and more distant goals are recognized. A boy will look ahead to an examination and feel satisfaction as he gradually finds himself covering and understanding the courses which have to be prepared for the examination. Satisfaction and dissatisfaction are not at all the same as the so-called pleasure-pain principle.

6. *The law of selection.*—When learning we select the response which seems best to fulfil our purpose of the time. This follows as a corollary from the law of satisfaction. When we are stimulated we can make a number of responses. This is one of the ways in which we differ from animals. When our instinctive powers function we can respond to the stimulus in a number of different ways. We then select which of these ways we are going to, as it

were, adopt; that is, the way which we think will best achieve our purpose, and which we will therefore learn. This selection is determined by the previous law, the law of satisfaction. When there are a number of responses open to a child, he will adopt that which brings him satisfaction; that is, the course of action which, as far as he can judge, will best help him to fulfil his purpose of the time.

Suppose a boy is learning to make a stool. He has a piece of wood for a leg, and a saw. Now it is possible for him to do a number of different things with that piece of wood and that saw. He may cut the piece of wood in two and so make it useless for his purpose. He may cut it down the centre and make it too thin for his purpose. So he will choose the response to the stimulus of the saw and the wood, which, in his judgement, will best help him to make the leg of the stool. Finishing the leg gives him satisfaction, and therefore, he selects this particular response.

But suppose another boy is in a bad mood and wants to annoy his teacher. For the time being this is his purpose. So he selects the response which will enable him to carry out this purpose. He cuts the piece of wood into two short pieces. By so doing he will surely make his teacher annoyed, and in carrying out his purpose, will, at least until the teacher takes action, feel satisfaction. If the teacher's reaction is not sufficiently unpleasant for the boy, the boy will repeat a similar selection of responses the next time he wishes to annoy his teacher.

As can be seen, often a child who is learning will, because of defective knowledge, choose a response which will not help him to carry out his purpose. Here our fifth law comes into action and because he gets no satisfaction from this response there will be little tendency to choose it again. At the same time it is the teacher's task to help children to select the right response, so that learning may take place more quickly than by a continual process of trial and error. The child must learn to use his intelligence in selecting his response and the teacher will help him to do this.

7. *The law of association.*—When we are learning, new ideas tend to become associated with ideas already in the mind. This connexion which is established between ideas results in the child, when an idea comes into his mind, 'calling up' other ideas with which the first idea has been associated or connected.

We have already seen the importance of linking up new knowledge with knowledge already possessed by the child, when teaching. If we can help the child to associate ideas, or in other words, to organize his knowledge, we will be helping him to learn and to be able to recall.

> There is nothing more characteristic of the mind than its synthetic activity. Our minds are constantly employed in combining sensations. It is thus that we learn to know objects. For example we combine certain sensations of sight, touch, taste and smell and perceive an apple. We may form a general idea or concept of an apple, without recalling a definite mental image. Thus the mind is busy, not only in associating objects present to the senses, but also in combining and rearranging mental images and ideas. Generally speaking our thoughts move onward by a process of association. One idea suggests another by virtue of a common element. A boy thinks of a certain cricket match, and this suggests a certain player who belongs to another school, so that presently the boy finds himself wondering if he would like to be a pupil there. It is evident that the use and guiding of

the principle of association is one of the essentials of teaching[1] (and of learning).

There are several different ways in which association takes place.

(*a*) *Association by contiguity.* Ideas tend to be connected which occur together, that is one after another in time. I think of a book and immediately after that of the author. Ideas also are associated because they are brought together by interest. I think of a picture and then of the object in it which specially interests me though it may not have been the next idea which came to my mind in order of time.

(*b*) *Association by similarity.* We tend to think of things together when they are alike in some way. We see a person and are reminded of someone who looks very like him.

(*c*) *Association by contrast.* We tend to think together of things which are opposite to each other.

(*d*) *Association of cause and effect.* When we think of a cause we then think of the result and perhaps vice versa.

There are other ways in which association works but these are the most important. We can see how these associative tendencies and ways of working of the mind will be used in learning. We learn things together which come together in time or in interest. We learn a result when we learn a cause. We learn together those things which are alike or which are violently opposed or are opposites. Thus this law of association can be used in all our work to help our children as they learn.

There is a well-known experiment that was carried out on a dog. Every time the dog was given some meat a bell was rung. When the dog was given the meat saliva began to flow. After some time so firmly was the association with the ringing of the bell established that when the bell was rung even though no meat was present, the dog's mouth watered.

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[1] P. R. Cole, *The Method and Technique of Teaching* (Oxford University Press, 1933), p. 40.

Another experiment of the same sort was carried out with a child and a rabbit. A child was shown a rabbit and at once put out his hand to play with it. But just at that moment a loud noise was made which frightened the child. The child at once drew back his hand. The same thing was done a number of times until at last the child became frightened at the sight of the rabbit even though no noise was made.

We use punishment in the same way in school. Punishment and an order are associated so that after a while the order alone is necessary. The particular association probably works only with younger children.

8. *The law of recency.*—Of two experiences otherwise equal we are more likely to recall the more recent one.

This is another way of stating what is sometimes called the law of disuse, which is simply that if we do not use what we have learnt then we tend to forget it.

If a boy learns that four times three is twelve, and then this is not used and not practised, he will soon forget it. He remembers those things which are recent in his experience. This means that until knowledge becomes habitual we have to give regular opportunities for revising it and making it recent. This is another reason why in school we do not work at one subject and then drop it for a term or a long while, but try to do something at each subject each day or at least each week. The law of recency requires us to keep up experience as much as we can, until knowledge is so ingrained that it is habitual or automatic. Hence in our teaching work frequent revision is very necessary.

9. *The law of transitoriness.*—There are certain times at which certain interests are prominent, or, as we can say, when certain instinctive tendencies show more strongly than at others. If we do not take advantage of these times the interest tends to disappear.

Many psychologists think that different instinctive likings show themselves at different ages, and that learning and school work should be arranged to suit these changes. We know that definite changes occur during adolescence, and that the interests of the adolescent are quite different from those of the child of nine and ten years of age. For example, we know that adolescence is the time to present ideals because the adolescent is interested in ideals, and also that this is the time to present the religious appeal. If this period is missed, then very often the interest in ideals and religion fades away, never to be revived.

In the same way, during the period of from eight or nine years to twelve years of age or so, the herd instinct is very strong and we have what we call the 'gang' period. The boy of this age is a keen Wolf Cub, or can be if given the opportunity, and this is one example of how the emergence of an instinctive urge can be used for the purpose of learning. If this opportunity is missed, the child will lose a great deal. Later, through team games the tendency to co-operate can be used.

This law means that we have to be on the look-out for the times when urges and desires emerge and should be ready to make use of them in our work. If we use them, then learning becomes much easier and much more satisfying because it comes naturally.

10. *The law of multiple learning.*—We never learn just one thing at a time. We always learn a number of things together. This is sometmes called the law of concomitant learnings.

During school hours the child is not simply learning the things which come in the lesson. He is also learning from the character of the teacher, from the teacher's attitude to his work and to his children, from his words, and from his actions, learning perhaps things which would astonish the teacher if he realized them.

When the teacher is taking a reading lesson with his class, his pupils will be learning certain things about the subject of their reading lesson. They will also be learning either to like or dislike, with different degrees of intensity, reading and literature. They will be developing some attitude or other towards their teacher, and this will colour their whole future lives. They will also be developing some attitude or other towards school and towards education in general, and this again is going to colour their whole future. They will be learning to be sincere or to be insincere, to express exactly what they think about the subject in hand or to keep their own feelings and ideas to themselves, and to give out what they think the teacher wants, or what they think will get them good marks. They will be learning to cheat or to work honestly. They will be learning to express themselves and to develop a liking for creative work, or they will be learning to be passive and to suppress all initiative. They will be learning to depend on themselves and to think for themselves, or to look to someone else for help whenever a difficulty arises, and to have no self-dependence. They will be learning to do what is right because they fear punishment, or to do it because they can see that it is the right and better way of acting, both for themselves and for others with whom they are living. They will be learning good manners or bad, selfishness or unselfishness. All these things are being learnt, and they are all being learnt at the same time.

As we can easily see, many of these concomitant learnings are far more important than the mere attaining of intellectual knowledge. Yet we very easily forget them, and pay no attention to them, as all our attention is on the intellectual knowledge. It is most important for the real success of our work, and for the future of our pupils, that we keep this law constantly in mind, and do our best to see to it that the concomitant learnings of our children are such as will help them to develop into good and cultured citizens.

> Attendant learnings are built into the nervous system like other learnings, by practice with satisfaction. Teachers need to provide their pupils with large opportunities for practising good attendant learnings with success. They also need to allow little chance for their pupils to practise bad attendant learnings, certainly never with satisfaction. Let success and satisfaction attend the right. Let failure and annoyance attend the wrong. In this, as in other forms of learning, the power of teachers is limited. They cannot compel learning, but they can encourage and guide it.[1]

CHAPTER VII

METHODS OF LEARNING

MEMORIZING

ONE OF THE FUNDAMENTAL FACTS about memorizing which all teachers must constantly bear in mind is that the child's natural power of retention cannot be changed, either for better or for worse. In other words we cannot improve our natural power to remember things by practising and by exercising our memories. The natural power of retentiveness remains the same. This power of retentiveness depends on a certain quality of the brain matter. The brains of some possess this quality to a high degree. Others possess it to a very low degree, and the majority come at various stages in between. But as Professor James reiterates, no amount of culture would seem capable of modifying a man's general retentiveness. There can be no improvement of the general or elementary faculty of memory. It is often supposed that those who memorize a great deal do strengthen their power to retain facts in their memories. But actors when questioned on this point have denied that continual practice at learning their parts makes any difference to their power of memorizing.

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[1] W. H. Kilpatrick, *How We Learn* (Y.M.C.A. Publishing House), p. 32.

We do find, however, that it is possible to train ourselves to memorize things more easily and more quickly, and that we can also train ourselves to retain what we have memorized for a longer time than we could retain it previously. The explanation of this is that we can improve our *methods* of learning, our methods of dealing with the subject-matter we are memorizing. We can learn better methods of organizing our work, of going about the task of memorizing. It is in this improvement in our *methods* of work that we find the explanation of an apparent improvement in the power of memorizing. A child may take a long while to learn a poem off by heart when he understands little of its meaning. It is more or less like nonsense rhymes to him. Then his teacher shows him that his work will be easier if he understands the meaning of what he is trying to memorize. As the child then follows this plan he finds that he can memorize poems more quickly. It is not that there has been any change in his power of retentiveness, but that there has been a change in his method. He is now dealing with his subject-matter in a better way, and so can memorize it more quickly.

As to the memorizing of facts by actors, Professor James says:

> What it has done for them is to improve their power of *studying* a part systematically. Their mind is now full of precedents in the way of intonation, emphasis, gesticulation; the new words awaken distinct suggestions and decisions; are caught up in fact, into a pre-existing network, like the merchant's prices or the athlete's store of records, and are recollected easier, although the mere native tenacity is not a whit improved, and is usually, in fact, impaired with age.
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> It is a case of better remembering by better thinking. Similarly when schoolboys improve, by practice, in ease of learning by heart, the improvement will, I am sure, be always found to reside in *the mode of study of the particular piece* (due to the greater interest, the greater suggestiveness, the generic similarity with other pieces, the more sustained attention, etc.) and not at all to any enhancement of the brute retentive power.[1]

Thus in seeking to help our pupils to memorize we have to pay attention to the methods used. It is here that improvement can be made and help can be effective.

There are a number of principles that we have to keep in mind when dealing with this matter of memorizing.

1. In the first place, memorizing is a method of learning which has to be used with great caution. There is a danger inherent in it. The danger is this. If children are encouraged to memorize too much and if they are given the idea that learning and education consist in learning things off by heart, then they will never learn to think, and their education will be a purely superficial affair. Very many people find it fairly easy to memorize, easier than to think and to solve problems. Great thinkers

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[1] W. James, *Psychology* (World Publishing Co.), Vol. I., p. 664.

and workers do not memorize more than they can help. Their brains and their time can be put to better use. To them the important thing is to know where to find information, so that they can get it when necessary. 'Unless there is some special reason for doing so do not memorize verbatim, but know where information on all subjects is to be found.'[1]

This is not to say of course that there should be no memorization in school. There are numbers of things which have to be memorized if children are to be able to make any progress. Such things as tables in arithmetic must be memorized. It would waste far too much time if a table had to be looked up every time it had to be used. The point is that memorization is not an end in itself. It is to be used only when there is an advantage to be gained from it. The danger is that teachers and pupils finding it the easiest method of doing work, and, perhaps, of passing examinations, use it far more than it should be used. Memorization is allowed to take the place of thinking, and this is fatal to all real education. Unfortunately in large numbers of schools this is what happens. Notes are dictated by the teacher and learned off by heart by the pupils. Both are under the illusion that the pupils are being educated. This is the great danger in the use of memorizing, and we must always be on our guard never to let memorizing take the place of thinking in our school work.

The question then arises as to how we are to reduce the prominence of memory work in school. This is an especially difficult problem in view of the large place that examinations take in our educational work. One thing that we can do is to use all our influence to see that the type of question set in examinations is not such as to encourage the use of memorization by pupils who are preparing for the examination. The trouble is not so much with examinations as such, as with the type of question set. It is possible, even in primary schools, to set questions which can be answered only when pupils think for themselves. In fact there is no reason why in certain subjects pupils should not be allowed to have their books in the examination room with them. The examination would test how they could use those books, a much more important accomplishment than ability to learn screeds off by heart. The first thing we can do therefore to discourage unthinking memorizing is to ask questions in class work and in examinations, which will encourage pupils to use their brains and not to rely solely on their memories. The type of question we ask has a very great influence on the type of work our pupils do.

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[1] Pryns Hopkins, *Aids to Successful Study* (Allen & Unwin, 1941), p. 43.

In the second place we have to inculcate habits of mental alertness. Some people say that children, and others too, like to memorize because of mental laziness. It may be true that by the time children grow up and get into high school and college they show signs of mental laziness. If they do so it is because of bad habits they have developed. There is no mental laziness about the ordinary normal, healthy, small child. Our task is not so much one of overcoming mental laziness as one of seeing that it does not develop as a result of our bad teaching and bad methods. People will not be mentally lazy if they are taught properly from the time they start school. Our task is the positive one of encouraging them to be mentally active. If we do this, then they will not resort to memorizing, but will be eager to use their intelligence and to think. We should teach in such a way that we help our children to resist any temptation which may come to use their memories too much. They learn this bad habit from what we teach them, and from how we teach them. If the dangers of memorizing are to be avoided then we must help our pupils to develop the right habits of mental work.

Having understood the danger of too much memorizing, we can now proceed to consider the principles to be kept in mind when legitimate memorizing is to be done.

2. When pupils are to memorize anything they should understand it and its meaning. It is more difficult to remember a list of unconnected words which have no meaning than it is to remember the same number of words making up a sentence which expreses meaning. Thus if we can see a meaning in what we are trying to memorize we will be able to memorize it better. If a poem is to be learnt by heart the children should understand at least as much of the meaning as they are capable of understanding, before they set to work to memorize it. Otherwise we are simply uselessly increasing their work. The poem should be read over, talked about, explained and enjoyed, and then, as a last step in the process, learnt by heart. The better the meaning of a thing is understood the easier it is to associate the ideas in it with one another and with ideas already known. This association of ideas is something which makes learning by heart much easier. The less we can associate what we are trying to learn with what we already know, the more difficult will be our task of memorizing. When a long poem, for example, has to be cut up into parts, we should be careful to see that each part is a unit as far as the meaning goes. The divisions should not be artificial according to a set number of lines or stanzas. It should be according to the divisions in meaning.

3. Memorizing has to be motivated, if it is to be really

successful. If the pupils have a purpose, and can see that a certain amount of memorizing of some subject-matter is essential to the carrying out of that purpose, then memorizing is done quickly, is better done, and gives far more satisfaction. The obvious example is the way in which children find no difficulty in memorizing for a play which they have decided to stage. Their purpose helps them to go through cheerfully and successfully, what otherwise would be drudgery.

Another way in which memorizing may be motivated is by a use of the play-way. When memorizing is connected with a game or a competition between two or more parties in a class, then we have a strong motive which ensures memorization being done well and quickly. Often drill work which has to be done can be made more interesting in this way.

Interest can be given to drill memory work by getting children to compete against their own records. They can keep records of the time it took them to learn certain things, and see if they can reduce that time. They can keep a record of the number of times they have to go over material they are learning by heart, and see if they can reduce the number of times. Records of the length of time during which material is retained in the memory can be kept and compared.

As can be seen, interest plays a big part in ensuring ease in memorizing. If the child is interested in the material to be learned, or interested in it because of its use, then memorizing becomes much easier.

4. When memorizing has to be done, the teacher should take any steps possible to secure concentration of attention. Interest, created or intrinsic, will ensure this. But usually the teacher should fix a time limit by which the material should be successfully committed to memory.

This will help to ensure attention being paid. The teacher, of course, will have to fix generous limits until he gets experience. He will also have to take into account individual differences. Some children can memorize material much more quickly than others. But as he knows his children and gets experience as to the average time taken to learn material by heart, he will be able to fix limits fairly successfully.

In connexion with the matter of attention the teacher should see that short periods, coming frequently, are spent on memorizing, in preference to long periods coming less frequently. It is far better to have a few minutes every day at such work, than to have one long period once a week. Children can do their drill work, and, indeed, any kind of memorizing, much more successfully if this is done. Their attention is not unduly strained, and they do not get fatigued.

5. Another principle that must always be remembered is the influence of the teacher. As we have seen in considering the laws of learning, the child is learning many things while the lesson is going on. One of these concomitant learnings is the development of the desire to learn by heart passages and material which appeals. When the child is really interested in poetry, for example, or in good prose either, if the teacher presents the material well, unconsciously the desire to memorize the attractive passages will be developed in pupils. The teacher's whole handling of his lesson will help or hinder this development. His example also, if he can quote passages himself, will help in this.

6. Memorizing takes place more quickly and more satisfactorily if we learn by wholes rather than by parts. That is, if a poem is to be learnt by heart, then children should learn it as a whole rather than learning one line first and

then another line, or learning one stanza first, and then another stanza, and so on. The method of learning by wholes consists in reading through the whole poem to be memorized and then attempting to recall as much as possible. Then the whole poem is read a second time, and the attempt to recall made in the same way and so on. To most of us this method does not appeal at first sight, and it is certain that children will not use it if left to themselves. Numerous experiments have been made, however, which show fairly conclusively that learning by wholes is from 10 to 30 per cent better than learning by parts. That is 10 to 30 per cent less time is taken over learning a poem, and it is also retained in the memory longer than if it is learnt line by line or stanza by stanza. We should therefore encourage our children to try to memorize by wholes and not in the usual way, by parts.

This method is useful only in the case of such work as learning by heart a poem or a paragraph of prose. It should not be used, for instance, in learning tables. Our aim here is that each part of the table may be known independently of the other parts. We do not want a child to have to go over the whole table in order to arrive at one part. A child should not have to go through the whole of the nine times table to find what eight times nine are. But in the case of such a thing as a poem which is a complete whole, and which we wish to know as a whole, the method is beneficial.

One reason why it is easier to learn by reading the whole poem through instead of concentrating on one part after another, is that we get the whole poem associated together, as it were. If we learn one stanza at a time, we have a number of separate entities which are often not properly associated together. We see this when a child gets stuck in the middle of a poem, and cannot get on till he is given the beginning of the next verse. His stanzas are associated together in themselves, but not with one another. When the poem is learnt as one whole, then each stanza is associated with the stanza following it.

When learning by wholes, the time given to a repetition of each part of the poem is more evenly spaced out, and time is not wasted in going over stanzas already well known. When one stanza at a time is learnt, usually the first stanza is gone over far more than the last one. The child goes over it every time he goes over the poem as far as he has learnt it. This need not be done, but it is what usually happens. When the method of learning the poem as a whole is used, the time given to repetition is spaced out much more evenly.

It is also more interesting to deal with a poem as a whole than to concentrate on one verse or on a couple of lines at a time. A poem has meaning, and we can appreciate that meaning much better when we read the whole poem right through. Thus interest, and therefore attention, are greater when the 'whole' method is used. It is always important to see that the meaning of what is being learnt is understood. The method of learning by wholes takes advantage of the benefit for learning that is gained from an understanding of the meaning.

There are certain disadvantages in learning by wholes which we have to take into account.

1. We cannot profitably use the method with a very long poem. If a very long poem has to be memorized then we should divide it up into meaningful units, that is, parts which have a complete meaning, and treat each of those parts as a whole for the purpose of learning.

2. The method of learning by wholes does not show results as quickly as the other method. When a child is learning one stanza at a time, it is easy for him to

see the progress he is making. He gets encouragement from this. He sees that he is gradually approaching his goal. But when he reads through the whole poem a number of times, as far as he can see, he is not making much progress at all. If he perseveres, he will find that almost suddenly he has mastered the whole thing. But he achieves his purpose more or less suddenly, and has to work for quite a while without seeing that he is getting anywhere. The other method enables him to see what progress he makes, even if it is slower. Thus when learning by wholes he is apt to get discouraged. Now this is very important, for when he gets discouraged then interest goes. The teacher then must explain carefully to his children about the method, and the way in which they will find themselves knowing the poem though they have not been able to check up on their progress. If he feels that he can do it, the teacher can demonstrate to the class, by means of a simple experiment, which method takes less time. He can set certain selected pupils to learn poems of more or less equal difficulty by both methods and note the time taken. This will not be scientifically accurate as there are certain things which affect the accuracy of the experiment. But he will arrive at the general truth, and will be able to show his children in a general way the truth of what he has been telling them.

3. Where some parts of a poem prove much more difficult than others, special attention has to be given to those parts, and here a mixture of the two methods has to be used. Otherwise the time given to the easy parts is the same as that given to the difficult parts, and naturally the latter do not get enough time.

4. It is sometimes said that pupils do not get enough opportunity for active attempts at recall. But this is not

the case if an attempt at recall is made after each time the poem is read through.

5. The teacher must watch the time. Naturally the 'whole' method suffers if only a short time is given to the work of memorizing. In fifteen minutes, for example, by the part method, perhaps three stanzas may be learned and those who have used this method will have something to show for it. But those who are using the whole method will have little to show. If they have another ten minutes they will be seen to be ahead of the others, but in the earlier stages, before the whole poem begins to come into the memory, they will seem to be behind. So sufficient time must be given. In using the 'whole' method it is the last minutes that are important.

6. Sometimes it is thought that the 'whole' method is more fatiguing than learning by parts. This is not usually the case however, and what appears to be fatigue is really discouragement and loss of interest, because no result appears to be forthcoming. Thus this is again a matter of encouragement. In fact we can lay it down that learning by wholes is to be preferred as long as the child has confidence in the method, and as long as a sense of progress can be sustained. Purely from the point of view of economy of time and effort, it is better to learn by wholes as long as those wholes are not too unwieldy.

Aids to Memorizing

1. When memorizing material, children should be taught to go over it to themselves. That is, after reading the material once or twice, they should then see if they can repeat it. This is obvious enough to older people, but small children often have to be shown how to do this. They often waste a lot of time because they do not know

such simple things. If as much time as possible is given to repeating or recitation, then the time of learning is appreciably lessened, and material memorized is also remembered better and for a longer period.

> The advantage of the recitation is partly that it centres the attention and holds the interest because it is a more active process. Since one soon begins to try out his acquisitions, he is stimulated to observe aids to the process, and to do his utmost to achieve the desired end. It is a practical application of the old adage that 'we learn by doing'.[1]

Far too often we see children in Indian schools learning material by heart by simply reading it over and over again, and reading it aloud. Teachers should train their children to spend at least as much time on recitation to themselves as on reading the material to be memorized.

2. Spacing of work should always be attended to. We have already seen that it is better to spend short periods of time on memorizing, and repeat these frequently. But we have to see to it that our children understand this. Usually they do not. When preparing, they work away at one task until it is finished, whereas if they interspersed short periods of learning by heart with other types of work they would save a lot of time. An experiment was once made on this subject. It was found that if a person kept at certain material until it was thoroughly mastered without leaving it, eleven repetitions were required to master the material. But when ten minute intervals were used, five repetitions were found to be sufficient. In another experiment, material was given eight readings a day for three days, then six readings a day for four days and then two readings a day for twelve days. This last gave the

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[1] A. S. Woodburne, *Human Nature and Education* (Oxford University Press, 1926), p. 139.

best results. Children therefore should be taught that it is more economical when memorizing to read the passage over two or three times daily (and try to recite it each time) for a number of successive days, than to try to do the whole thing at one sitting. Teachers must remember this when setting work to be done.

3. Children should be taught to associate one fact with another. It is often largely through knowledge of how to associate facts, and of ability to do this, that improvement in memorizing takes place. We have already seen that one reason why learning by wholes is better than learning by parts is because the associative links are not broken. In the same way, in all memorizing, we can consciously use the power of association to help us. But children have to have this pointed out to them. They have to be shown how thinking of things together helps us to remember those things together, and how a string of associations in this way helps us to remember a number of facts which, if thought of separately and singly, would be recalled with great difficulty. Professor James tells of a man who was always forgetting his umbrella until he practised associating the idea of umbrella with the idea of doorway. The result was that whenever he came to a doorway he thought of his umbrella and never forgot it. Teachers can help their pupils greatly in remembering facts if they help and train them in associating ideas.

4. Presentation of material in logical sequence often helps memorizing. It is much easier to remember a lesson where the facts given have followed on logically one after the other, than to remember the same facts presented without any order. This is another instance of the working of association. We form associations easily when the facts follow in an orderly and logical manner.

5. Imagery, especially visual imagery, can be a help to memorization. Pictures are very useful for this purpose. Hence children's books should have large numbers of pictures. We can remember a story much better if it has been associated with a number of pictures. When memorizing a story it is a great help to imagine a picture to go with each stage. Pictures can also be associated with words in learning to read, and can thus help in remembering the words. Dr Laubach has used this method very successfully in some of his schemes for teaching adults to learn to read quickly.

6. Rhyme usually helps children to memorize. This is not true of all, but is usually the case. We find rhymes easier to retain than ordinary prose. Hence facts are sometimes put into rhymes in order to help children to remember them. This is an artificial method, but it has its uses.

7. Special devices known as mnemonics are sometimes used. As for instance, the initials of a number of words to be remembered may form a word and the word is remembered, and so the words. This however is not a very satisfactory way of remembering facts, and its use should not be encouraged. A mnemonic is an artificial means of association, and may be useful but should be used only where other means have failed. Foreigners sometimes have difficulty in remembering which of the Urdu words *baen* and *daen* means 'right' and which means 'left'. The correct meanings may be remembered by noting that 'l' comes before 'r' in the English alphabet and 'b' comes before 'd', therefore '*l*eft' goes with '*b*aen' and '*r*ight' with '*d*aen'. Such mnemonics may occasionally prove useful but, as I have said, should be used sparingly.

8. Dividing subject-matter up under heads, often helps in its memorizing, especially if a strong associative link

can be established between the different heads. This simply means organizing subject-matter, and, as we have seen, material organized into logical order is more easily remembered.

9. I wish lastly to emphasize again the necessity of understanding the meaning of material before any attempt is made to memorize it. Too much attention cannot be paid to this, especially in India, where children are so apt to go ahead and think that all they have to do is to commit material to memory, whether it is understood or not. Understanding of meaning makes the work of memorization easier, enables the pupil to save time, and means that what he has memorized is of some use to him.

Experimenting

Teachers should conduct some simple experiments with their pupils to find out something about the power of retention their pupils possess, and how they are able to use this power. All pupils differ from one another in these two things. It is easy for a teacher to find out which of his pupils have most power of retention. He can check the number of times they have to read over a passage before they can recite it perfectly. From this he can get a comparison of one pupil with another. He can also test the length of time for which a passage is retained in the memory, and this will give him another comparison. A knowledge of the difference in the powers of his children will result in a great improvement in his treatment of them, and in the methods he uses with them.

Children also differ in the desire that they have for learning by heart. There are, of course, numerous things that have to be learned by heart by everybody. There is drill work which must be done, and in the case of those to whom memorizing comes hard the teacher will have to use methods, and show them methods, which will help them. But when it comes to a question of memorizing for pleasure, or of memorizing material which is not essential for the carrying on of ordinary work, then children should not be forced to learn by heart. If a child feels the appeal of a poem, he will quite likely want to learn it by heart. But in the case of those who either do not feel the appeal, or for whom memorizing of that nature is difficult, the teacher should not bring pressure to bear. It never does a child any good to force him to learn by heart (unless, as I have said, it is necessary for other work) but will only affect his appreciation of the material in question. We must recognize that children differ vitally, and for those who find it difficult to learn by rote, there should be freedom to learn in their own way. They will not suffer by not learning things by heart, and a great deal of injury may be done by forcing them to do so. The teacher must do his best to make sure that the power of retention is really small. This is not difficult to do. He will then know how to treat the pupil in question.

Another point that has to be kept in mind by the teacher in connexion with memorizing, is that children have different kinds of memory. Some have visual memories, some have audile, some have tactile, some have kinaesthetic. That is, some use one type of memory as a rule, and others use another. We all can remember by all ways, but each of us commonly uses one particular type. Now children should be trained to use all types. But at the same time if the teacher knows which is the favourite method of each of his pupils, then he will modify his methods accordingly.

How to Study

One of the most important things that we can do in school is to help our pupils to learn how to study. Knowledge of right methods of study will be of great value to them when they leave school and go out into the world; of greater value indeed, than all the facts that they learn in school. In seeking to carry out this task there are certain principles which we have to keep in mind.

1. When children set to work to study by themselves, whether this study is done in school, under supervision, or at home, they should understand clearly what they are doing and why they are doing it. It makes all the difference to one's work if one has a clear idea of what one as aiming at, and why this particular piece of work has to be done. If there is to be any hope of children taking an interest in their study, then they must understand clearly what they have to do. The teacher must see to it that when he sets work to be done his children know exactly what he wants. He should also explain, if he feels it is necessary, why this particular thing has to be done. If children are set problems to do, the teacher should be sure that they understand all the terms used, that it is quite clear to them what is asked for, and that they have had a chance to become familiar with the rules and processes necessary for the solution of the problem. In other words, the teacher has to see to it that there is a fair chance of his pupils successfully doing the work that has been set.

2. The teacher should also guide the study of his pupils. This may be done orally in class, when the teacher can indicate the lines along which the children should work. He can also explain methods of study to them. But it can be better done, at least in some subjects, if a form of assignment is used. This assignment is given to the children. In it difficulties which they will meet in studying the particular passage or lesson in question will be explained. Questions will be asked which will guide the children as

they study, and suggest to them profitable lines of thought. Problems arising out of the subject-matter to be studied will be noted, and suggestions about them made. Suggestions will also be made to guide the general thinking of the children on the subject-matter. Questions will also be asked which will lead the children to think for themselves, and they will be asked to do things which will give them opportunities to be active. This method of giving a guidance assignment is of the greatest value and can be used even in the primary school. In lower classes, to a large extent, it will take the form of play-way exercises. Such assignments can be used either in school or in supervised study or at home. The use of such aids to study will gradually enable pupils to study intelligently and successfully for themselves, for the whole effect of the use of these assignments is to engender self-reliance and independence in pupils as they grow up.

3. In all study there should be a purpose, and the pupils should clearly understand and appreciate this purpose. If this is the pupil's own purpose, that is, if they are studying so that they may be able to carry out a purpose of their own, so much the better. But whether study is self-initiated or not, pupils should always understand the purpose of what they are doing, and it is one of the teacher's tasks, in helping them to study effectively, to see that they do understand the purpose of what they do. The purpose will naturally depend on the type of work. Study may have to take an inductive line in order to arrive at a rule or a generalization of some description, or it may take a deductive form where some rule is applied and tested. Study may take the form of preparing for something such as a speech, or writing a composition, or telling a story. But there should always be a purpose in it. When people grow up they do not study without a purpose, and we cannot expect children to do

so either. When study is directed towards a definite purpose, it becomes more definite and vital.

A definite purpose gives a basis of selection. Children have to learn to select what they are going to learn. This is one of the things in which teachers have to train them. When they have a definite purpose in their study, then they learn those things which will help them to carry out their purpose, and will not bother about the rest. They cannot do everything. So the purpose acts as a basis of selection. Too often children are just set so many pages of a book to 'do'. How much more interesting their work will be if they have something to do, the accomplishing of which will involve the studying of those same pages of the book. The putting before them of a purpose, a definite aim in their work, adds a great deal to the interest of the work, and also improves very considerably the quality of the work done. It may be simply the finding of answers to questions on the subject-matter of the pages set. It may be using the knowledge they get from these pages for some other work. But in some way or other the teacher should try to see to it that there is a definite purpose in the work the pupils have to do, other than simply getting the work done because it has been set, or because it is necessary for passing an examination.

A purpose in study also reassures the child that what he is doing is of some use. There will be some practical outcome of what he is doing. What he learns will be useful. This again is a very important point. A small child, especially, likes to feel that there is going to be some practical result of what he is doing. If there is a purpose to his work, then he can see how the accomplishment of that work will enable him to carry out his purpose in a practical way. Learning then becomes real, and has some meaning for him. It is connected with his practical life.

4. The teacher should insist on thoroughness in study. It does not matter so much how much work a child does, but it does matter very much that he does thoroughly what he does do. The child will learn this essential habit of thoroughness only if the teacher insists on work being thoroughly done. The child will do his work up to the standard expected by the teacher. If he finds that he can get away with a thing half-known, then he will not trouble to learn it thoroughly. If he finds his teacher will not accept such work, then he will gradually form the habit of doing his work thoroughly, and learning thoroughly what has to be learnt. This does not mean to say that the teacher should insist on perfection in everything. Perfection can be demanded in certain things such as tables. In others where more independent work is done, perfection is relative to the ability of the child and to his opportunities. But the teacher should not rest until he is sure that a child has done his best to do his work thoroughly.

5. Study should be active wherever possible. We have already seen that even memorizing can be made active if time is put into actively going over or reciting passages or material, and not simply reading it all the time. In other ways too, study should be active. As we have seen, a definite purpose will be of great help here. But the teacher should see to it that when his children are studying they have to be active as well as passive. Study must not be simply reading. It must be active assimilation, active thinking, active expression work. Hence the necessity of 'guides to study' questions which will lead the pupil actively to think about what he is reading. It is just as important that study should be active as it is that school work in general should be active.

One way in which studying pages in a reader can be made active, is by training children to look for the main subjects of paragraphs, and to search for the main ideas in what they read. This, of course, cannot be done to any great extent with small children, though even they can tell what a story or a paragraph is about, especially if there is some outstanding event or individual in it. But with older pupils this type of work can be extensively used, gradually increasing in complexity as they grow older. Such a method of study trains pupils in discrimination of the relative values of facts and ideas, and also gives them practice in the selection and grouping of facts.

It is essential as children grow up, that they learn to use summarizing and outline when they study. If their study is to be effective they have to learn how to get at the principal thought of a paragraph or a page, and how to make a brief outline of what they have read. This work can be begun in the upper classes of the primary school. They will naturally have to be taught how to do this kind of work in class before they can do it when studying by themselves. But gradually the teacher can accustom his class to summarizing and selection and so aid them in their study.

This type of work is particularly important in a subject such as history. Here pupils have to learn to select main facts and ideas. They have also to learn how to deal with topics. They should be trained to work up a topic, and to select facts and ideas for what they want to do. It is a skill that comes mainly with practice, but it is a very necessary skill and a teacher cannot give more important aid to his pupils than training them in this method of study. At first easy topics can be given for which pupils will get the information they need in their readers or in library books. Gradually topics can be increased in difficulty.

If this method of study is used, pupils will also get training in using books. Even in the upper classes of primary schools a beginning can be made with this. Pupils can learn how to collect material for a speech, or for writing a composition, or for writing a short, simple biography on some well known character. The teacher can show them how to use library books for this purpose, how to take notes in a simple way and so collect their material.

Later on comes training in contrasting different accounts of events, in evaluating accounts, and in criticism of what is read.

6. At the same time we have to help our children to develop the faculty of independent judgement. The best way to do this is by the use of assignment guides to study. But the teacher may do a good deal in this direction without assignments by suggesting questions about which pupils are, after their reading, to make up their minds. They should then come to class prepared to give reasons for their answers. This can be done in history, geography, and the mother-tongue.

7. It will also help pupils in their study if they are given opportunities for discussion of what they are studying and are encouraged to discuss among themselves problems and questions which may arise. This can be done, as a rule, only in boarding schools and with older pupils. But where it is possible for pupils of the same class to meet in groups occasionally to discuss things which have arisen in the course of their work and study, considerable help is received. It helps those who discuss to understand better what they are studying, to see aspects of a problem which had not occurred to them, to make up deficiencies in their own ideas and to remember better what they have been studying.

TECHNIQUE OF STUDY

1. When children commence study the teacher should see that they get actively to work at once. There should be a minimum of dawdling over taking out books, getting pencils or pens, and ink and paper ready, and so on. Pupils should be trained to get straight to work. We all know how we can find other things to do instead of sitting down to a job on which we are not over-keen. One of the teacher's tasks is to try to develop in children the habit of getting to work at once.

2. Children should be trained to tackle the more difficult work first. Easier tasks should come later.

3. Children should be trained to plan their study. This may not be very necessary with small children, but they should gradually develop the habit of planning the time they will spend on different tasks which have to be done. Teachers can help here by suggesting the time which should be taken over different portions of study work and the order of subjects. There must be a balance between the time spent on new work and the time spent on revision work. The teacher will be able to help here also.

4. Children should be trained to work as quickly as possible. If reading has to be done, then the more quickly it is done the more times it can be gone over, or the more time there is for thinking about it and for answering questions. Reading and working quickly do not affect the quality of the work. In school, pupils can be trained to match themselves with the clock, and thus build up habits of working quickly. Quick work also helps to prevent wandering of the attention.

5. Children should be trained, when studying and finding the answers to questions, to be relevant. Even among

university graduates, it is surprising and disheartening to find what large numbers, in answering questions in an examination, will give extensive information which has nothing to do with the topic dealt with in the question they are supposed to be answering. It is obvious that very little training is given to pupils in secondary schools, or to students in the universities, in analysing questions, understanding exactly what is asked for in questions, and in giving exactly the information or doing exactly what is required by the question. The ability to be definite and relevant is extremely useful in life as well as in examinations, and we should help our pupils to cultivate this art. It is not beyond the power of any normal pupil to be relevant, provided he is given the necessary training. This training should begin early in the school course, and should continue right through that course. We should always take time to get our pupils to understand questions they have to answer, to make clear to themselves what the question really means, and what is required in the answer. Then there will be some hope of them giving only such material as is relevant.

6. Attention should be paid to physical conditions. In most cases with Indian children it is not possible to obtain ideal conditions at home. But the teacher should try to impress on parents that as far as possible they should help their children by providing physical conditions which will aid them in their study. There should be a good light, freedom from distraction, seating and writing arrangements which are fairly comfortable and are such as do not cause a strain, good ventilation, and as much quiet as possible. All these things are rarely possible but they should be aimed at. In boarding schools it is possible to make satisfactory arrangements for study periods so that these physical conditions are met.

STUDYING TOGETHER

This is a vexed question. While teachers often feel that working together teaches pupils lessons of co-operation, and that pupils can give one another valuable help and save one another's time, on the other hand there is always a great danger that so-called working together simply means that one quick worker does the work for another slower one. This is all right for the quick worker, but is bad for the other who does nothing for himself. It follows then that if two or more pupils are to work together they must be of approximately the same standard of intelligence and attainment. There may be no objection to a clever pupil occasionally helping one who is dull, but such help should not be more than occasional. The teacher is the right person to give help in such cases, as he knows how to help in a way that will not mean that the child does nothing for himself.

Where children are of about the same standard, however, co-operative work may be valuable, especially in the carrying out of a project. But at the same time we have always to guard against the danger that one or two will do most of the work, and the others will be passive. It is essential that most of the work be done by the individual. Helpful criticism may be obtained when working in co-operation with others, time may be saved in solving difficulties, and interest in work may be increased. But we have to remember that in the last resort the pupil has to learn for himself, and that he has to depend on his own brains and intelligence. From co-operative work he may get help in using these, but it is he who has to use them, and this must always be kept in mind. Teachers will usually find that there is a big danger of copying of work when pupils are allowed too great freedom in working together when studying, unless there is careful supervision.

Silent Reading

We have already seen that it is an advantage to work quickly. This is especially the case in reading. The more quickly we read the more ground we cover, and it has been established that quick reading does not mean that less is taken in than when reading is slow. In fact the quick reader usually gets more than the slow reader. Now we will read more quickly if we read silently. Therefore teachers ought to be continually trying to train their pupils to read silently. It seems to be very difficult for Indian children to develop this habit. In every school one finds pupils reading aloud or pronouncing the words more or less silently. There may be times, as in learning a foreign language, when reading aloud is beneficial. But in the normal study and work of the school child, reading aloud is of no special help, but is a real hindrance. When reading, children should be taught to try to see phrases and sentences, not words. This cannot be done when reading is done aloud. All whispering and movements of the lips should be eliminated and children should be trained in silent reading. Their progress will be very greatly increased if this is done.

Learning by Doing

We do not really know a thing until we have used it. We may have a theoretical knowledge, an academic knowledge, but the reality is not part of us, not really our own, until we have used it. It is by using knowledge that it becomes really assimilated and truly part of ourselves.

For example, I may know, by learning from a book, the meanings of the Urdu word *lagna*, but I cannot be said really to know the word until I have used it in sentences in ordinary conversation or in writing. And we know that in this particular case it takes a long while really to know all the idiomatic uses of the word in question. No doubt we can begin the process of learning by theoretic work with a book, or with a teacher, listening to what he says. But the process of learning will never be completed until we have actively used the word in its many different uses. This principle is true of all learning.

Children learn happily when they are active and especially when they are creatively active. The activity must be one which appeals to them, that is, appropriate to their ability and temperament and the strength of their instinctive tendencies. But such activity will always result in intellectual development.

> I will give one instance of the advantage of learning by doing over learning by listening. About a year ago an ingenious piece of apparatus for teaching fractions was brought to my notice, and I was empowered to test its efficacy by experimenting in one of the London elementary schools. A large mixed school was chosen where the headmaster took an exceptional interest in mathematical education. The only classes in this school where fractions had not been dealt with at all were the lowest two, consisting of boys and girls about eight years of age. All the brighter of those children were put into class A and the rest formed class B. For six months both classes worked at precisely the same scheme of fractions for precisely the same time per week. Indeed, the conditions of study were as similar as possible, except that class A (the brighter class) was taught by means of the apparatus which was manipulated and explained *by the teacher*, while class B (the duller class) was allowed to measure in fractions, to

> cut out pieces of paper, to compare them by superimposition, and so forth. It must be understood that the apparatus used was really as admirable a device as could possibly be conceived for rendering the equivalence of fractions and the simple operations perfectly clear. And yet when the two classes (fifty-four children in one and fifty-two in the other) were tested by me after six months' time, class B did better than class A. Of ten questions set, both classes got the same marks for three, class A got higher marks for two and class B higher marks for five. Enormous as was the advantage of superior natural intelligence, it was in this contest outweighed by the advantage of learning by doing.[1]

This principle of learning by doing applies to the child's thinking. We must refrain as far as possible from doing the child's thinking for him. Too much help prevents a child from actively using his mind. He will gradually get into the habit of expecting the teacher to do his thinking for him. He sits while the teacher talks, knowing that notes are going to be dictated later and that all he has to do is to take these notes down. Later he can 'learn' them. This is not real learning. The child can learn only as his mind is active. Such guidance as we give must stimulate thought and not kill it.

We know how true it is that if we do not use a power we have, we lose it. It is equally true of what we learn. If we do not use what we have theoretically learned, then we soon forget it. This is because the process of learning has not been completed. Use, doing, is necessary if the knowledge we learn is really to become ours. Hence this principle of learning by doing is essential in all learning. It is not simply a device we can make use of when we wish to, as a change. But it is part and parcel of the learning process without which learning is not complete.

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[1] P. B. Ballard, *Handwork as an Educational Medium* (Allen & Unwin), pp. 103-4.

Now activity, or doing, does not mean merely physical activity, though this usually comes first. But it means, as we have seen, activity of the intelligence, and also of the emotions, and of the will. If a pupil is to develop all sides of his personality, then it is necessary for him to be active in all ways, to exercise all the different powers he has.

It is necessary for teachers to make sure that their children see a use for what they do in school. The natural bent of children is to use their powers and to be active. They want to use what they get. We have already seen how in everyone there is a general urge to activity, an innate desire to be active in some way or other. Children are continually looking for ways of exercising their powers, of giving expression to the different instinctive tendencies to activity with which they are born. Our work then is not difficult. We have to run with nature, to give opportunities for the natural desire for activity to function.

Activity is, however, never purposeless. A child may not always realize the purpose behind his activity, but a purpose there is. As he grows older, he does realize that he has purposes. He wants to carry out those purposes. He likes to see the use of what he does. If he cannot see the use of it, then he loses interest and has to be cajoled or forced into working. Grown-ups and children are alike in this that they want to see the use of what they do.

> A few years ago someone tried the experiment of employing some men at good wages to pile rocks in one corner of an enclosure, setting them to undo the work by piling the rocks somewhere else, and then getting them to rebuild the first pile, and so on. In a short time all the men gave notice—the wages did not

> compensate them for the impression of uselessness which accompanied the task.
>
> This sense of futility is likely to be an accompaniment of all study where no application is found for the newly acquired learning. One trouble with our whole educational system has been that opportunities for putting our hard-won information to some practical purpose have been years distant. To remedy this we should seek for . . . occasions when we can apply the new knowledge.[1]

We have so far two principles : firstly that no learning is complete without being used actively ; secondly that if it is to be successfully used, there must be a purpose in our work, a purpose of which we are aware.

We have already approached this subject from a different angle in considering laws of learning. We saw how there must be readiness of learning ; this is the purpose. And we also saw that there was a law of exercise with its opposite the law of disuse, which told us that there must be activity if real learning is to take place.

The teacher's main problem is always the matter of arousing interest. Teachers are always on the look-out for methods which will help them to make their work interesting. Now interest depends on desire. And desire in its turn depends on purpose. In fact desire and purpose are two different ways of looking at the same psychological state. When we desire something, then it is our purpose to get it. What we desire, we plan to get. Carrying out a purpose is fulfilling a desire. Thus if we can use children's desires and purposes our interest problem will be solved. Hence in all real learning, learning by doing, the children's purposes will play, and should play, a big part. If we can start off from the desires and purposes of the children then we will be in a very favourable position as far as learning is concerned.

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[1] Pryns Hopkins, *Aids to Successful Study* (Allen & Unwin, 1941), p. 153.

There is no need to labour this point as it is obvious to everybody that we take a keen interest in learning what will help us to achieve a purpose. And children in this are the same as grown-ups. Our method then must be founded on the purposes of the children. If children are carrying out their own purposes, then activity and effort on their part are assured. If they are doing what they do because they have to carry out a purpose of the teacher, which they do not understand, and in which they are not interested, then there will be little activity and little real learning. Using pupils' purposes means pupil activity. Ignoring them means, as all too often happens, passivity and lack of learning on the part of the pupils.

> Many a lesson is too much like a guide describing the journey to the would-be traveller, who sits and listens but does not leave his chair to undertake it. In other lessons the guide himself laboriously takes the journey again and again, but the traveller that should be, remains inert. In short, no matter how admirably a lesson is planned, there is no really methodical teaching (and, we may add, learning) unless the pupils by their own efforts pass along the road traced for them; for as has been said, true teaching is nothing but arousing and directing the learning activity of another.[1]

As we have said, this activity is not confined to bodily activity. When we learn by doing, we use all our powers, and not one power alone. For example, we learn to appreciate pictures by trying to draw ourselves; we learn to feel, by ourselves feeling as, for example, when acting in a play; we learn to appreciate good poetry by trying to write poetry ourselves; we learn to appreciate good prose in the same way. And of course we learn to write good prose by writing ourselves, not simply by reading it. We learn to draw, by ourselves drawing, not by looking at pictures. It is easy to multiply examples, in our ordinary everyday work, of how we learn by doing. Learning is an active process where we take up knowledge, understand it, arrange it and put it to use. There is nothing passive in real learning. And the more expression we give to what we assimilate, the more the whole process of learning is stimulated.

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[1] J. Welton, *Principles and Methods of Teaching* (University Tutorial Press, 1929), pp. 52-3.

> A kindred fact is that our memory is partly muscular. An experiment tried in the psychological laboratory takes the form of blindfolding a person, placing his limbs in various positions, and seeing how far he is able afterwards to reproduce those positions. It has been found that if the subject is entirely passive and non-participant in the placing of the limbs, he has only a vague sense of the positioning of each member, and cannot with any accuracy reproduce the imposed posture. If, however, he either resists or assists in the placing of the limbs, he knows what occurred and can reproduce it. For this reason we deepen the ideas we get from our books and lectures when we make our muscles participate in the learning process by taking written notes, or still more, when we perform laboratory experiments. Memories are, in fact, kinematic. As Dr Mace has said: 'Much would tempt us to say that the seat of the memory is not in the mind, but in the muscular system. It resides, at least, not so much in the receptive as in the responsive side of our nature. We learn by doing.'[1]

We have seen how purpose aids children in their task of learning. We will now examine a little more closely the part that purpose plays in active learning and in stimulating the interest that will ensure activity.

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[1] Pryns Hopkins, *Aids to Successful Study* (Allen & Unwin, 1941), p. 154.

In a purposive act there are five stages. In the first place the child forms its purpose. He desires something, and forms the purpose of getting that thing. The boy wants a kite. Then he decides that he will make the thing, and forms the purpose of getting that thing. The purpose will now determine his activity.

In the second place the child plans. He knows what he wants to do, but he has to make his plans for getting it. He is going to get a kite. He has to make plans for getting the necessary material, and for finding out how to put his material together.

In the third place he carries out his plans. After getting the material for his kite he has to put it together.

In the fourth place he judges whether his efforts have been successful. He puts his work to a practical test and finds out whether what he has done has been correct, according to his purpose or not. The kite may not fly at all. It may fly in a half-hearted way. It may fly very well. But according to what he is able to do with his kite, he judges his work.

Fifthly he finds where he has made mistakes, and then seeks to remedy them. He may realize that he has to have some advice and help, and sets out to get it, and so to find out where he has gone wrong. He may be able to see for himself where he has gone wrong, and be able to correct the mistake himself. At any rate, he finds his mistake and corrects it.

All through this process the boy has been doing active mental and physical work. His learning has been real, and has been related to reality because it had to result in something that would work. It was no theoretical affair, but was put to a practical test.

The method which uses this process of learning is commonly called the project method, to which we have referred in Chapter III, Section 2. This is not really a method as such. It is really a name for a particular psychological approach to the whole business of education. The main essentials are as follows.

In the project method the teacher seeks to make use of the needs which the child feels, and so of his purposes to meet those needs. The project method takes advantage of the motive and interest power which a real purpose gives. Thus the method seeks to take advantage of the purposes of children.

When pupils feel a need and decide to meet that need, then they are encouraged to go ahead. Either the class as a whole then adopts the project (that is, the carrying out of the purpose) or it may be divided into groups, each of which will carry out a project.

Each group then goes through the five stages we have described above. They first, after adopting their project, make their plans and decide exactly what they are going to do. They will find that in order to carry out their purpose they will need certain things or certain knowledge which they have not got. They have then to secure this knowledge or make these things. For instance they may require permission to use certain school property and have to learn to write an application to the headmaster. They may have to make calculations which they do not know how to make, and so have to learn certain rules of arithmetic. In this way, in the carrying out of their purpose, they will gain knowledge and learn to do a number of things.

Finally work begins, and as it goes on numbers of skills are brought into play and a good deal of knowledge is assimilated. At the same time the central activity correlates all the work, and also links it up with real life. The children are actively learning because they are *doing* something for which they feel a real need, and for which, therefore, they can see the use. Moreover, all their learning is active, whether it be assimilating of knowledge or attaining skill in some work. Their learning too is tested by reality. They can see for themselves whether what they are doing is really correct, and whether it will give them the result they want. They can correct their mistakes either by themselves or after getting advice.

This style of work never lacks interest. Interest is intrinsic because of the purpose which underlies all that is being done. And for the same reason the learning is active and therefore real.

It is not claimed that all subjects in the curriculum can be learned by this method. But in primary schools a great deal of the ordinary work can be done in this way. It may not follow the logical order laid down in the syllabus, but, as we have seen, the proper approach is the psychological one. Logic can come in when there is exposition to be done. Teachers using this method simply have to be careful every now and then to fill in any gaps that may have been left because the projects undertaken have not covered all the necessary subjects or all the parts of some one subject.

It may sometimes be difficult, especially with those unaccustomed to the working of the method, to get children to bring forward needs which will form useful projects. There is no objection in such cases to the teacher, who, after all, is a member of the group, suggesting ideas and discussing things with his children until they take up some project. The only thing he must be careful about is not to force them to take up a project of which they do not feel the need. If this is done the method is deprived of its motive power and the purpose, not being felt as their own by the children, has no drive in it. But it is rarely impossible to create gradually in a class that seems to have no needs, the feeling that certain things are necessary, and that they would like to do them or make them.

One of the good points about a project is that with primary classes it always has some manual work or craft work at the centre. It may be building a room, or growing vegetables, or making a post office, or making envelopes, but there will always be some such activity at the centre, and it thus enables the teacher to correlate all his work round this activity centre. Projects may be large, taking a whole term or even a whole year to finish, or they may be small, taking only a week or two to finish. Both are equally useful.

FATIGUE

In considering the matter of learning, and the methods we should teach our pupils to use, it is very important for us to keep the matter of fatigue in mind ; in fact this is necessary for all our teaching work.

We can consider fatigue from two aspects ; physical fatigue and mental fatigue. There is also nervous fatigue, which is a case for the doctor or trained psychologist, and so outside the range of the teacher's work except that he should be able to recognize it. Physical fatigue is fatigue arising from physical work and mental fatigue is fatigue arising from mental work. This latter fatigue, as a matter of fact, is a combination of physical fatigue resulting from fatigue in such muscles as are used when engaged on mental work, for example the eye muscles and head and neck muscles, and a lack of interest, a feeling of boredom. That is, what we call mental fatigue is often very largely not a matter of being tired *by* our work but of being tired *of* our work.[1]

Fatigue is caused by the accumulation of waste-products (toxins) in the muscles. These toxins are produced faster than they can be got rid of, because of the work being done, and the result is an accumulation of poisons. Thus we feel tired, and the muscles, if not rested, will refuse to work. According to the theory that these poisons accumulate in nerves as well as in muscles, they affect the brain centres controlling the muscles, so that they can no longer do their work properly, and these brain cells then produce the feeling of tiredness. From this point of view all fatigue is really fatigue of the nervous system.

For our purposes, however, we can divide fatigue into that caused by physical work and that produced by mental work, although fatigue itself may be the same natural phenomenon whether caused by physical or mental work.

A. PHYSICAL CAUSES OF FATIGUE. 1. The exhaustion of the muscles and nerves is due to the presence of waste-products in excess. These are caused by the muscles in question being used too much without sufficient periods of rest. Fatigue may be the result of bad posture, sitting in an uncomfortable position for too long, holding a book, or writing, in an uncomfortable position, playing games too long, or doing physical exercises or physical work of any kind for too long a time. The remedy for fatigue caused by such things is attention to comfort of position and posture in school, sufficient rest periods, and attention to periods of violent physical exercise or work being properly regulated according to the age and strength of the child.

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[1] Some authorities hold, however, that mental fatigue is caused by the energy of the cells being used up and by the formation and accumulation of waste-products (toxins) in them. In the same way, some authorities hold that all fatigue, whether we call it physical or mental, is caused by this accumulation of waste-products in both muscles and nerves. Its essential nature then is blocking of the paths of discharge where one nerve joins another (at the synapses).

> It seems to have been assumed by many people that sitting or standing in one position needs no effort. Actually it requires very considerable expenditure of energy, leading to rapid local fatigue, and to strong aversions in the person concerned. From this point of view, the practices of the teacher who was considered a model disciplinarian were thoroughly unsound. It is not good practice to keep classes of pupils standing in a straight line, or sitting bolt upright with arms behind their backs for periods of thirty to forty-five minutes. For young children this is torture. When it is necessary for children to be seated (for an oral lesson for example (they should be allowed to adjust themselves comfortably at the outset, and allowed responsible opportunity to change their posture from time to time.[1]

2. *Lack of ventilation.* This is a common cause of fatigue and can be very easily remedied. The danger from lack of ventilation is usually that there is no movement of the air in the room where the children are working. It is not a matter of the air being used up, or vitiated, but simply a lack of movement.

> The important cause of fatigue and inefficiency is air stagnation. . . . The universal remedy is discovered to be *air movement*. Behind this fact lies the research which proved that the function of ventilation is to remove surplus heat from the body, and that the harm of stagnant air lies not in any chemical change, but in its lowered cooling power.[2]

The remedies for lack of ventilation are obvious. This need for air movement is another argument for open-air

[1] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941).

[2] C. S. Myers, *Industrial Psychology* (Oxford University Press, 1944).

schools, or at least for doing as much work as possible outside. Especially in the hot weather, in order to reduce fatigue, it is a good plan to work outside in the shade of trees, where there is as much air movement as it is possible to get.

3. *Poor lighting*. This is another contributing cause of fatigue. It has been found that in industrial concerns poor lighting lowers output directly. It increases spoiled work and leads to overstrain. The same is true in school. Light must be sufficient, and must come so that the children get full advantage of the light that does come. This is a matter that should receive attention where schools arrange for evening study, and where the teachers can suggest improvements in lighting arrangements in homes, when students are working at home. This, of course, does not affect primary school pupils. In primary schools the teacher has to see to the lighting of the school room.

4. *Noise*. It has been proved in experiments carried on in industrial concerns that noise is also a contributing cause of fatigue. This is very often a thing about which the school and the teacher can do little. Noise coming from outside the school, especially in town schools, cannot be helped, as a rule. Where anything can be done, the teacher should pay attention to it. We get accustomed to noise and are unconscious of the effect it is having. But noise in school itself can be dealt with. It is fatiguing, to say nothing else, for one class to be trying to work while another class is reading loudly and noisily, in the same room, or just through the wall. It has been said that one always knows when one is approaching a primary school by the characteristic noise coming from it. For most of this noise there is no necessity and teachers should see that it is reduced to a minimum. On the other hand, fatigue is also caused when proper sounds are not loud enough. If

pupils have to strain to hear what the teacher says, or what other children are saying when they answer questions, then fatigue is caused.

5. *Bodily weakness.* Fatigue is often caused by bodily weakness or by disease. This is especially noticeable at the outset of disease. Where children suffer so much from fever as they do in India, disease is a considerable cause of fatigue. The teacher must do what he can to see that children who are suffering in any way or seem to be sickening, or are convalescing, are not allowed to over-strain themselves.

6. *The weather.* In India we have always to take into account the hot weather. This is well known and merely needs mention. But periods should be shorter in the hot weather and rests more frequent. If work cannot be done outside, if possible there should be some arrangement, such as punkas, to stir and move the air.

B. MENTAL CAUSES OF FATIGUE. 1. The fact that a child is fatigued because of any of the physical causes we have considered will have an effect on his mental state and may, largely through the imagination, extend itself to his mind. Hence the importance of dealing with physical causes.

2. Fatigue may be produced by thwarting the child when he is trying to carry out his instinctive desires. If a child wishes to be active along certain lines, and for some reason cannot be so, the result is an emotional effect which results in fatigue. This is another argument in favour of activity in schools.

3. Boredom and lack of interest cause fatigue. We very soon get tired of what we are not interested in. If we have to force ourselves to do some task which is unpleasant, and in which we are not at all interested, fatigue sets in very much sooner than it does when we are working at something in which we are keenly interested. This, as has already

been pointed out, is usually a case of 'tired *of*' rather than of 'tired *by*'. The effect is much the same, however.

The remedy for this is a change of occupation, or a variation in methods of teaching or learning. Fatigue in school depends on the length of the lesson, and the arrangement of the subject, as well as on the physical factors which we have considered.

We have to beware of the old idea that a change of work is as good as a rest. This is a fallacy. If a person is really fatigued, than a change of occupation is certainly not as good as a rest. If it is a matter of loss of interest, or boredom, then a change of occupation is beneficial. Otherwise the only thing to meet the situation is rest. It is very important to keep this in mind in our school work.

> The recuperative value of change of occupation is never as great as that of complete rest; nevertheless some mental relief is undoubtedly effected by changing over from something which severely taxes the attention to something which is less tiring. Tests have shown, however, that even the lightest task still requires a pre-occupation of mind which prevents complete recuperation such as comes from absolute relaxation. We should rest between periods of study as completely as possible, as this is better than a mere change of occupation.[1]

There should be frequent short rest periods. If such an arrangement is made then children will rarely be completely fatigued. Each rest period is followed by an increase in the amount of work done. It is also important for small children to get enough sleep. In fact this is important for everybody. This is why in many schools arrangements are made for small children to sleep at school towards the end of the morning. As a matter of fact if everybody in school could have a short sleep before commencing the afternoon's work, the effect would be very beneficial.

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[1] Pryns Hopkins, *Aids to Successful Study* (Allen & Unwin, 1941), p. 60.

More attention should be paid to the matter of rest and distribution of work than is usually done at present. It is very uneconomical to work when tired. Pupils often work on late at night when it takes them a long time to get through the work. Consequently it is not well done when they have finished. If the same work were done in the early morning, it would be done in a much shorter time and done much better. Teachers should never force children to work when they are tired. Time spent in rest is well spent.

Usually schools have a break for recess in the middle of the day. It would probably be better for children and teachers and work, if there were more frequent spells. If not after every period, at least there might be a short rest period in the middle of the morning and another in the middle of the afternoon, as well as the middle recess. We have to remember that physical drill does not constitute a rest, though it is a change.

We have to take into account the fact that there is a warming up period after a rest. That is, it takes us a little time to get into our stride again. Players rarely get into top form right at the beginning of a match. We do better work on Tuesday, as a rule, than on Monday. The best periods in the school day are not the periods at the beginning of morning school and directly after recess, but the second periods in the morning and afternoon. With short rest periods, except in special cases, this matter of warming up does not come into the picture so much. When only a short rest is given, little warming up is needed after it, while at the same time it has a beneficial effect.

Warming up and the onset of fatigue have to be taken into account when determining the length of periods in school. There are three stages in a period, (*a*) warming up, (*b*) full working, (*c*) falling off. In the third stage fatigue is beginning to make itself felt. Thus in any period the second stage, that of full working, should be as long as possible. The period must not be so short that pupils barely get through the warming up stage, nor should it be so long that the falling off, or stage of the onset of fatigue, is too extended, so that pupils suffer. Ideally the period should close at the end of stage (*b*). This cannot be arranged for all pupils in a class, as every child differs in this as in other things. But on an average a period for senior pupils should not be more than forty minutes in length, while for very young ones twenty or twenty-five minutes will usually be enough. The difficulty of the subject will also affect the length of the period. For more difficult subjects the period will be shorter.

There are some periods in life when the child makes rapid progress in physical growth, such as from 3 to 7 and 11 to 14 or 15. It has been observed that at such periods of accelerated physical growth the rate of mental development decreases. The human organism acts as a whole, and if rapid physical growth is going on we cannot have rapid mental growth at the same time. We must be careful therefore to avoid mental overstrain during such periods. This is particularly important in the pre-adolescent stage. At this stage we often find what we term laziness, when really the rapidly growing young person finds it difficult to concentrate on mental work for long periods. Too much home-work should not be demanded at this stage.

Fatigue is also evident if attention is not paid to the law of maturation. If we try to teach a child some form of skill or a mental operation for which he is not ready, he quickly becomes fatigued. His movements are not co-ordinated properly, and improvement is slow. The pupil, unconsciously, does not want to learn, as he has not reached the right stage of maturation. The result is a rapid onset of fatigue. When maturation point is reached, however, progress is rapid, there is good co-ordination of mind and body, and very little fatigue.

It is impossible to avoid fatigue in work. If we are working properly we are sure to become fatigued, and our pupils are the same. What we have to guard against is over-fatigue and lack of rest. We have also to distinguish between fatigue and boredom. The signs of both are often the same, at least in the initial stages of fatigue. Pleasant work, in which we are interested, is less fatiguing than unpleasant. Fatigue does not come so soon when we are actively working as when we are passive. Following out an interest or purpose of one's own is less fatiguing than doing what someone else wants us to do because we have to. Thus we see that methods of avoiding fatigue are all in line with the best methods of learning.

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CHAPTER VIII

THE CURRICULUM

THE OBJECTS OF THE SCHOOL

IT IS LOGICAL for us to understand the reasons for the existence of our schools if we are to have any hope of arriving at an adequate idea of what they should teach. The object of the school will regulate and determine the subjects that are to be taught in it. We must first decide, then, what our schools exist for; what we aim to do by means of them. A knowledge of this will enable the teacher not only to come to some conclusion about what is to be taught in the school, but will also enable him to defend against criticism the subjects he is teaching. This criticism is by no means a theoretical thing. The criticism that comes from parents is very real and has to be met, especially where changes are being made in the curriculum, and parents do not understand why certain things are being taught, and certain other things not being taught. The teacher needs to be in a position to explain to parents what he is trying to do, and why, therefore, certain subjects are taught and certain methods are used. He must therefore know why his school exists, and exactly what it is trying to do.

This knowledge not only helps him to explain his curriculum and methods to outsiders, it also helps him to check up on his own work. If he carefully considers what the object of his school is, then he has taken the first step towards seeing whether it is carrying out those objects. And this is the first step towards seeing whether any changes are necessary, and if so what changes.

Often this whole matter of the curriculum seems to practical working teachers to be something very academic. It does not concern them. They have to teach the syllabuses and the subjects they are given, and have no opportunity of making any changes, and, indeed, have no say in the framing of the curriculum. They simply have to do the best with what is laid down for them. Now this is true, and from one point of view the matter of the curriculum is out of the purview of the ordinary teacher. But from other points of view it is very important that the teacher should understand the objects for which, and the principles according to which, the curriculum is framed. For one thing the teacher has his share in public opinion, and can have quite a big share in moulding public opinion in educational matters. If then we are to get any changes in the curriculum, such as the centring of the primary school curriculum round craft-work, then the teacher has a very valuable contribution to make. But he cannot make this contribution unless he understands something about the principles underlying, or that should be underlying, the curriculum in the school. The ordinary working teacher is the one, as has been pointed out, who has to defend any change against opposition and criticism from the parents, or from members of the general public, who are in most cases conservative in outlook on educational matters. This the teacher cannot do unless he understands thoroughly what is being done and why it is being done. Furthermore, if the teacher understands the aims of the school, and the type of curriculum necessary to ensure those aims being to some extent achieved, then he knows what changes to work for. But if he does not know these things, he is working in the dark and his opinions will carry but little weight.

A clear knowledge of the objects of the school, and of how they are to be carried out, will give zest and point to the teacher's efforts to make improvements. If he knows the type of curriculum there ought to be in his school, he has a definite goal before him. This will guide him. If he understands the principles behind any particular curriculum, he will also see the reason for defence of the present curriculum or for offence against it. He will know where to direct his efforts for reform.

This point is perhaps more important than it seems. Many teachers feel that their work is not as effective as it ought to be. Their pupils are not being developed as effectively as they should be. But they are at a loss to know where the defect is. Very often this defect can only be seen in the light of a knowledge of what the curriculum ought to be. Thus a knowledge of the principles on which a curriculum should be built, and of the resulting kind of curriculum, will often illumine the teacher's work for him, and enable him to make his efforts in the right place. It will also enable the progressive teacher, whenever he gets a little freedom, to throw his weight in the right place, and in this way to do something, even if only in his own school, to improve matters.

I would like to emphasize that the main or even the most important object of the school, even of the primary school, is not the securing of literacy. No doubt this is important. But it is subsidiary to other more important things. If we make this the most important object of our schools, we will get, as we *have* got, a very impoverished type of education, scarcely worth the name.

> It has been impressed on us from many quarters that the main aim of primary education is to secure permanent literacy. We regard this as an unbalanced view of the purpose of education at any stage; and even if we accepted it we would not subscribe to the present method of attempting to secure literacy. Literacy, like happiness, is not achieved by pursuing it as a narrow objective ; it is a by-product of satisfying activities. Literacy does not consist in reading and writing but in the use of reading and writing and, it may be added, of speaking and listening. A child will not master these simple skills nor form the habit of using them unless they are required for purposes which are significant to him rather than to his teacher. Conning books, learning by heart, and chanting in unison, have their legitimate place in the disciplines of learning but they do not by themselves constitute an education for young children.
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> It is no surprise to discover that this concentration, at the infant stage, on literacy as the goal of schooling, finds its natural expression in the worship of literary facility at the higher stages of education. If the seed

> is sown in the infant school it is idle to complain of the fruit as it ripens in the university.[1]

We need something, then, richer and more inclusive for the object of a school than merely to give literacy.

It will be recognized that in any type of school we are laying foundations. A great deal of what is done will simply be the beginning of what is to be continued in another grade of school. But this does not mean that the primary school exists as a place of preparation for the next higher grade of school, that is, for the middle school, or that the middle school is a place of preparation for the high school. The children in a primary school have a life of their own to live, and the school must do its best to help them in every way it can to live that life. This then can be a worthy object for our schools. They should aim at providing an environment which is best suited to the social and individual development of its pupils during the time when they are in the school. It will try to do this by helping them to live as rich as possible a life during that time. For by living a full life, in which there are opportunities for the development and growth of all the varied powers of its pupils, those pupils best prepare themselves for whatever is to follow. The object of the school is to help its pupils to live, as fully as possible, the life they should be living at that particular age. By so doing it ensures the proper growth and development of its pupils.

Looking at the subject from the point of view of the individual pupil, the main object of the school is to help its pupils to develop full and well-balanced personalities. This means that the school aims at an all-round development of body, mind and spirit. Its activities, that is the subjects in the curriculum, will therefore be those connected with these three divisions of man's personality, always remembering that it is only for purposes of discussion that we divide the personality thus. Some objects will have closer relation to the physical well-being of the pupil. Others will help more particularly in the development of his powers of thinking and judging, and will contribute to his store of knowledge. Others again will have a closer relation to the development of character, taste, and spiritual powers.

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[1] A. Abbott and S. H. Wood, *Report on Vocational Education in India*, p. 11.

From another point of view we can say that the object of the school is to provide scope for the pupil to get all types of experience which will enable him to develop himself in relation to his fellows, and to adjust himself to his environment.

> The familiar psychological analysis of experience into (*a*) conation, or the active, striving experience, (*b*) cognition, or the knowing experience, and (*c*) affect, or the feeling experience, provide an alternative starting point. Following it out, we might conclude that school studies must represent (*a*) what man does, and strives to do. It ought to include the major crafts of mankind, especially those which subserve the fundamental needs of food, clothing, and shelter. These would lead naturally to the use of tools and to the fine arts that inevitably emerge as practical problems find their solution.
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> The curriculum ought also to comprise (*b*) what man knows. There must be a representation of his major modes of thinking; thus there must be language and literature, science, mathematics, history, and geography—the traditional intellectual studies in short. Finally the school must not fail to provide experience of (*c*) man's main modes of feeling, and their expression in art, poetry, and music. These are the means by which man has forged the power of expressing his sense of value,

> and they must on no account be neglected. It was Plato, supreme among the educational idealists, who declared that training 'which leads you always to hate what you ought to hate, and love what you ought to love', is rightly called education.[1]

But the school also has an aim with reference to society. Even when looking at its work from the point of view of the individual pupil, the social element looms large, as no individual can develop except in relation to his fellows. All development must be social development. But there is a difference in emphasis according to whether we consider the matter primarily from the point of view of the individual or from the point of view of society in general. The school has to try to do both these things. When viewing its work from the point of view of society, we can say that the aim of the school is to produce good citizens. Now a good citizen is one who does his duty by the past with a view to the future. In other words the good citizen is one who has both a backward view and a forward view. He seeks to carry on and to conserve all that is good that has come down from the past, and also to make progress. Further, his ideals will be democratic ones. It is the aim of the school to produce such citizens, and the work that is done in school must be the type of work which will enable the pupils to go out prepared to do their duty in these ways.

In order to do this, the curriculum should supply definite situations in which children get experience of living in a society, of living together. The school must give training in the art of living together. The school must aim at helping its pupils to learn theoretically and practically those things which are necessary for them to know if they are to be able to live successfully with others, that is, in society. It must also give opportunities for the actual practice of the art of living together. It must therefore teach those things which are necessary for successful living in the social and physical environment in which its pupils find themselves, those skills which enrich life and enable people to make their due contribution to the common life of society. The school must inculcate those standards of moral action which are essential for successful living in society and for getting true satisfaction out of life. Pupils should leave school prepared to put into society all that they can, knowing the best ways of doing this, and anxious to do their share in helping mankind to make progress.

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[1] J. S. Ross, *Groundwork of Educational Theory* (Harrap, 1956), p. 199.

Enough has been said about the aims of school to enable us now to consider some of the principles which should be kept in mind when framing a curriculum.

THE PRINCIPLES UNDERLYING THE CURRICULUM

1. *The forward-looking principle.* What a child learns in school must help him to adjust himself to conditions of living in this world, and must further give him a foundation of knowledge, feeling and will, which will enable him to change those conditions where they need changing. The pupil of today is the citizen of tomorrow. He should leave our schools a progressive-minded person. That is, the personality developed by his work in school should be such as will be able not only to live successfully in the stage towards democracy which we have now reached, but will also enable society to make further progress towards a really democratic way of living. The curriculum, then, must be such as will enable the school to educate for progressive citizenship. In educating thus for

the future we must remember that if the future is anything like what we hope it will be, there is going to be far more leisure for men and women than there is now. Even now we say that we can judge a man's education by the way in which he uses his leisure. This is going to be even more true in the future than it is now. Progress in society is going to depend to a large extent on the way in which people use their leisure. The curriculum then, should be such as will help children to learn how to use their leisure. There will therefore be more stress laid on art, music, crafts, dramatics, literature and creative work in general.

2. *The conservative principle.*

> It is, in fact, being increasingly recognized that the various subjects of the curriculum represent certain forms of skill and certain branches of knowledge which have proved to be of importance in the experience of the race, and which have to be taught to each succeeding generation. From this point of view it is the function of the school to preserve and transmit the traditions, knowledge and standards of conduct on which our civilization depends.[1]

This is probably kept in mind much more than the forward-looking principle when curricula are framed. We look to the past and we decide what has been useful to those who have gone through school in the past and we then go on to lay down that those same things will be useful to those who are going through school now. We determine the needs of pupils who are in school now, by what has been seen to be useful to those who have gone before, and are now at work in the world.

Now there is, as will readily be seen, a considerable danger in such a procedure. Often those who draw up the curriculum are unconscious of it. It is perhaps more dangerous when it is followed unconsciously. For this principle to be of any value, it must have a selective element in it as well as a conservative one. Merely to carry on what has been done in the past will ruin our best efforts. This must be modified in the light of other considerations. If we are to adopt a conservative attitude, it must be a selective attitude also. By that I mean that we must select, and select carefully, and with great restraint upon ourselves, what we are going to put in the curriculum, from among those things which have come down to us from the past.

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[1] *Handbook of Suggestions for Teachers* (Board of Education, London), p. 37.

Now it will at once be admitted that there are certain subjects which the experience of the race has shown to be necessary for progress and which every child must know. For example the tools of learning and acquisition of knowledge, such as reading, writing and numbering are such. No one will dispute this. What is not so certain, however, is the time and place of these subjects. The conservative principle does not give us any guidance as to when these subjects are to be taught nor in what connexion. It simply tells us that these subjects are valuable, and that they should therefore form a part of the school course of every child, at some stage. When and in what connexion they should come in, will have to be determined by reference to other principles. The same is true of what we may call general culture subjects. It is important that the accumulated culture of the race should be handed on. This much the conservative principle will tell us. But naturally we have to select what cultural subjects we are going to have in the primary school curriculum, and what in the curriculum of the high school. Obviously the child cannot learn all cultural subjects. In so far as it tells us that there must be cultural subjects in the curriculum our conservative principle is valid. But that is all it does. We must remember also that the conservative principle looks to subjects and not to the pupils. In these days when it is accepted that education and schools, and therefore curricula, should be child-centred, it is clear that this principle does not take us very far; not nearly so far as it took the framers of curricula, say, fifty years ago.

3. *The creative principle.* The curriculum must include those activities which will help the child to develop as he takes part in them. This is our main object, and we have therefore to keep this in mind when we determine what the child is to be taught. The curriculum will include those subjects which will enable the child to exercise its creative and constructive powers, which will cater for his active interests, which will give him opportunities to sublimate the instinctive powers with which he has been endowed. The subjects he works at in school should be a basis which will provide for the development of his interests, which will encourage him to carry on those interests, which will provide him with leisure occupations when he leaves school, even if he does so after passing through the primary school only. By his work in school the special aptitudes of each child should be discovered and developed. There must be subjects which will give scope for this.

> There is a profound lesson for educators in what has been called the law of transitoriness of instincts.[1] Like the sucking instinct in mammals, and the following instinct in certain birds and quadrupeds, the child's first promptings to any one of the intellectual interests we have named may fade away and become practically irrecoverable, unless opportunities be then and there forthcoming. Everyone knows how sorely against the grain are a grown

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[1] See Chapter V.

> man's efforts to become a decent musician, or naturalist or linguist, and how well-nigh impossible it is that he should ever feel really at home in any field of knowledge or skill, unless the days of his youth have been blessed with the stimulus of timely opportunities. This is no plea for the dabbler in many things, or for the pretentious amateur; it is a plea rather for the cultivation of broad interests in these days of narrow specialism, and for ensuring that none of the child's native gifts shall escape our notice, and so perish of inanition.[1]

It will be seen here also that while this principle suggests a type of subject that shall be included in the curriculum, it does not tell us when or where it is to be put in. It may be argued that creative work may be done in any subject, and that all subjects, if properly taught, will encourage the development of children's interests. It is true that creative work can be done in most subjects. But this is not enough. In a curriculum that is suited to the needs of today and of the future, there must be a definite bias towards definitely creative subjects. Especially necessary is it that we take advantage of this principle of the transitoriness of instinct, and that in primary schools, for instance, we provide children with the opportunities of using the tendencies to action that are predominant in those ages. This is one of the main arguments for making the primary school curriculum centre round a handcraft or activity subject. The primary school age is the time when children show their desire to use material and to construct things. Hence it is the time for handcrafts to be put in the curriculum. By doing so we lay the foundation of the whole future creative life of the individual. If we fail to do so then the chance is lost and large numbers will never develop their creative faculties.

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[1] T. Raymont, *The Principles of Education* (Longmans Green, 1939), p. 106.

4. *The principle of preparation for life.* This is probably the favourite principle in curriculum building and is at the bottom of what ideas large numbers of people have about what should be taught in school. Now we may without much hesitation endorse this principle as a valid one. What a child does and learns in school should prepare him for life. But when we come to putting content into this idea, that is, to deciding exactly what we shall do in order to carry out this principle, then we find great differences of opinion.

Now primary and middle schools are most emphatically not vocational schools. They are not, or should not be, places where a child learns only or chiefly those things which shall help him to earn his bread and butter. Admittedly all that he learns will help him to do that. But getting a job or earning a living should never be the determining idea in deciding what shall be taught.

Nor can we fall back on the idea that any school is to prepare children for the next stage in their schooling. Again, it is perfectly true that the school will do this. But again this cannot be the consideration that decides what subjects shall be in the curriculum. We should not teach a subject simply because to do so will prepare a child for the middle school to which he may go after passing through the primary school.

When we say that the curriculum must look to the preparation of the child for life, we mean that it will do this if certain facts are kept in mind.

The first of these is that a child prepares for the next stage of his life by living fully the stage in which he is. The best preparation for life that we can give a child is to help him to live fully and richly his life at the stage at which he is. That is, by concentrating on a full development of the powers of the child *at that particular stage*, in ways suited to that stage, and by means of work suited to that stage, we are best preparing him for the next stage and for life in the world later on. When we wish to have a curriculum in the primary school which will prepare children for life, we do not look at the subjects first, selecting those which we think will be useful later on, though not at the time. We look first at the child and his nature, and we select subjects which will develop his interests, call forth his powers, appeal to him in the stage at which he is, and so encourage him to live a full life then and there. This is how he is prepared for life. By living life well and truly at one stage, he automatically prepares himself for the next stage.

The second fact we have to keep in mind is that the curriculum must be child-centred. That is the subjects must be chosen in the light of our knowledge of child nature. If we wish a child to live life fully at any stage, we must pay attention to what interests him at that stage, to the special attitudes he is likely to have at that age, to what is likely to appeal to him, and to what will take advantage of the dominant instinctive tendencies of the stage. 'Education ... regards the child as an individual, growing by his own activity, living in his own environment, and preparing himself for adult life, not by imitating the adult, but by living as fully as possible in the environment of childhood.'[1]

5. *The activity principle.* We know that life is a process of growth. In this growth there are stages, which follow one another. Each of these stages has its own

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[1] F. Smith and A. S. Harrison, *Principles of Class Teaching* (Macmillan, 1937), p. 32.

peculiar needs. Now, as we have already seen, growth and learning take place only where there is activity. The curriculum therefore, if it is to meet the needs of the various stages of growth, will do so only if it is thought of in terms of activity and experience, the activity and experience peculiar to each stage.

> In the words of John Dewey . . . both practically and philosophically the key to the present educational situation lies in a gradual reconstruction of school materials and methods, so as to utilize various forms of occupation typifying social callings, and to bring out their intellectual and moral content. In place of a school set apart from life as a place for learning lessons, we have a miniature social group in which study and growth are incidents of present shared experience. Playgrounds, shops, workrooms and laboratories not only direct the natural active tendencies of youth, but they involve intercourse, communication and co-operation.
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> The general movement is away from the old over-reliance on verbal instruction, formulated subjects and learning from books, and in the direction of more varied and many-sided individual activities in keeping with children's real interests. It is perhaps most simply and clearly expressed in the later Hadow report on the Primary School: 'The curriculum is to be thought of in terms of activity and experience, rather than of knowledge to be acquired and facts to be stored'.[1]

We find the Abbott and Wood report emphasizing the same thing:

> It is vitally important that young children should not be required to sit still for long periods at a time. A young child needs rest it is true, but he must play,

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[1] *Education in a Changing Commonwealth* (New Education Fellowship), p. 202.

> he must explore, and he must be physically active if he is to derive a daily satisfaction out of his attendance at school. In short he needs experience more than instruction.[1]

Thus activity of body and mind must be ensured by the curriculum we lay down. We have already seen how this can be done through the project method. In reality the project method is not a method of teaching. It is a means of determining the curriculum. It also ensures that an activity is at the centre of the curriculum and that all subjects are correlated with this activity. We must always remember also when we speak of activity that we are not thinking simply of bodily activity, or manual activity, important as those are. We also include mental activity.

Now if we are to meet the demands of this activity principle and ensure growth in the stage of life in which the child is, it is necessary that what the child does in school should be related to life. If we are seeking to help the child to grow, then his activities must be those which will help him to live his life as he is meant to live it, that is, to exercise all his powers in the environment in which he is. Far too often the subjects that a child learns in school have no apparent relation with his real life at all. School is an artificial place. If this is so, and if the curriculum is such that in school the child is trying to work in a world that is foreign to him, and has no connexion with his ordinary world of thought and action, then we shall never be able to achieve the objects we have in view.

The curriculum must supply the needs of children. These are naturally related to their lives. But it will do this only if, as we have already seen, it is child-centred and not subject-centred; if, in other words, our object is to help the child to grow, and to develop the powers he has. A child needs to play when he first comes to school and for some time after that. Play is a need of his nature. He will learn best when acting in the spirit of play. Hence play-way subjects must be the ones that he studies, though 'studies' gives a wrong impression of the free play activity of the child. He is full of curiosity, and so those subjects will figure in the curriculum which will satisfy that curiosity. There will be no difficulty about providing for activity when we take account of the needs of the child.

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[1] A. Abbott and S. H. Wood, *Report on Vocational Education in India*, p. 10.

> Subject-matter is one of the means for enlarging the child's experience, but its choice and arrangement must be determined by the teacher's insight into the child's active needs.
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> The child's development may be conceived as a series of disturbances which a changing environment offers, and his response is to end the disturbance or adapt himself to it. The process is largely one of re-adjustment, and the child, like an artist, reshapes old material in new constructions.[1]

As one considers these principles which we have been studying and begins to try to frame a curriculum which will do justice to all of them, one is at once faced with the fact that life, not to speak of school life, is too short to do and learn all the things that a well-framed curriculum would seem to demand. We hear a continual cry against the overloading of the curriculum; in these days a cry that is too often justified. Every specialist insists that his subject is, if not the most important, at least one of the most important, and must have a place in the curriculum. Thus we have attempts to accommodate an overwhelming number of subjects in the curriculum, with the result that either children are grossly overworked and given violent mental indigestion, or else subjects are treated in a very superficial way. What is the way out of this dilemma?

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[1] F. Smith and A. S. Harrison, *Principles of Class Teaching* (Macmillan, 1937), pp. 32-3.

Firstly we should remember that apart from certain elementary skills and tools, such as reading, writing, and the use of the four elementary processes in arithmetic, it is not the quantity of knowledge that a child gets that is important, but the way in which he gets it. The main contribution of the school to the life of its pupils and to the life of society is not getting a mass of facts into its pupils' heads, but the training it gives them in methods of work, of thinking and of living. The school should be giving a knowledge of 'how' rather than concentrating on a knowledge of 'what'. Apart from the essential minimum of facts which all must learn, the important thing is for pupils to leave schools with their curiosity permanently stirred, with the desire to experiment aroused, and with a knowledge of how to find out facts, how to use books, how to study, how to think logically, how to assess and weigh up evidence, and how to live and work with others. Hence in framing a curriculum we do not need to have every subject under the sun included in it. We can include representative subjects. We can aim at opening up paths of future intellectual adventure, rather than seeking to give pupils a large amount of actual knowledge in every subject they take. The *quality* of the work done is the main consideration, not the quantity.

> The school must be thought of primarily not as a place where certain knowledge is learnt, but as a place where the young are disciplined in certain

> forms of activity—namely, those that are of greatest and most permanent significance in the wider world. Those activities fall naturally into two groups. In the first place the activities that safeguard the conditions and maintain the standard of individual and social life: such as the care of health and bodily grace, manners, social organization, morals, religion; in the second the typical creative activities that constitute, so to speak, the solid tissue of civilization. ... In the school curriculum all these activities should be represented.[1]

SUBJECTS TO INCLUDE IN THE CURRICULUM AT DIFFERENT STAGES

There are two subjects, as we may call them for want of a better name, which will appear in the curriculum at every stage of the school life. The one is physical welfare and the other is religion. Both of these are, or should be, activities rather than subjects. They can be taught whether or not special periods are assigned for them.

Physical welfare is the foundation of all growth and progress in life. The question of whether there will be set periods for health instruction will depend on particular problems that may arise. A great deal of the theory of physical welfare will be dealt with in general science. But progress in this activity is largely a matter of the formation of right habits. Physical welfare must be the concern of every teacher in every classroom, and out of school as well as in school. It depends on good home conditions, proper provision of games, and the necessary physical drill. All the more attention will have to be paid to the subject because of the very fact that it does not figure as a subject with its periods as other subjects do, and because there is not so much formal instruction.

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[1] P. Nunn, *Education: Its Data and First Principles* (E. Arnold, 1930), p. 211.

Physical welfare will include regular physical training, mainly through games with the younger pupils, and through regular physical drill along with games, with older ones. With very young children physical training will be altogether through games and play exercises. Physical welfare also includes such things as training in postures, keeping records of weight, height, and so on, health clubs, Red Cross Societies, periods for rest, attention to fatigue, tidiness and cleanliness of rooms, clothes, bodies and surroundings. Teachers will also do their best to adopt preventive and curative measures where they are seen to be necessary, either doing what they can themselves, with the aid of the Red Cross Society and the school dispensary, or, if a doctor is available, in consultation with, and with the help of, a doctor. Special attention will be paid to the good organization of regular daily games for every pupil in the school. Probably no single activity in connexion with physical welfare is so important, right through the school, as this.

Religion is a more difficult matter. Yet few will deny that it must have a place in the curriculum at every stage. This again is a subject which can be taught even though no special periods are assigned to it. At the same time there should be short daily periods for instruction in religion and for worship. This raises the difficult problem of schools with pupils from different religious communities. Even here, however, where definite religious instruction cannot be given, it is possible to inculcate a religious spirit.

> In religion there are two things, carefully to be distinguished. One we may call the religious spirit; the other is theology, which is a theory of the objects that evoke the religious spirit. . . . The essential marks of the religious spirit are the recognition that there are objects of supreme and universal worth which rightly claim our reverence and service, together with a sense that, though in our weakness and unworthiness we must ever be their 'unprofitable servants' yet to deny their claims or to fail in loyalty to them is shameful and dishonouring. Thus a man may reveal the religious spirit in devotion to truth or art, or in loving service of his fellows; such devotion and service being felt, as we have said, as a Divine charge which he may not refuse, though its form, varying with the form of one's individuality, need not be the same form for him as for another.[1]

This religious spirit ought to be in every school. There will be no periods for it but it will be 'caught' by pupils in any or in every period they are in school. It also will be in the curriculum, even if in intangible form, from the first class to the eleventh. In schools where there is not the difficulty of pupils from different communities, or from a neutral management, this intangible influence will be supplemented by regular religious instruction right through the school.

In the primary school, handcraft work should be in the centre of things as far as possible, especially for the first three years. This is most successfully done by means of the project method. This is creative work, and there is no difficulty about it. Creative work should also be done in connexion with other subjects, but then it takes more thought and planning. But here we have creative constructive work in a form which appeals strongly to every child. It must be remembered that in the primary school handcraft work is not vocational. The primary school does not aim at turning out those who are trained to earn their living. The value of such work lies simply in its creativeness, in the training that it gives in planning and executing a piece of work, in the training it gives to hand and eye, and in the opportunity it gives for activity of mind and body. A wide interpretation must be put on handcraft work. It is not to be confined to one or two well known activities such as woodwork and weaving. Any activity of the hand and body can be included. It includes drawing and art.

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[1] P. Nunn, *Education: Its Data and First Principles* (E. Arnold, 1930), p. 213.

To quote the Abbott and Wood report once more:

> Manual activities should find a place in the curriculum not because the pupils, or some of them, will earn a living by manual labour, but because satisfaction of the desire to make or create is necessary to balanced development. It is, indeed, often the key to a boy's serenity.
>
> Manual or constructive work is educative while it is being planned and at the actual moment of execution. It is valuable for other reasons. It may lead pupils to acquire interests which will stand them in good stead in their leisure hours; and the importance of education as a means of enabling young men to sustain with dignity the intolerable leisure known as unemployment cannot be over-rated. Moreover, manual work gives a boy handiness invaluable to those who proceed from general to vocational schools.
>
> By manual work we do not mean just carpentry or weaving, or any other activity of which a definite name can be given. We include any task which makes a demand on a boy's skill, judgement, sense of observation and power of calculation, and combines all or some of these in a constructive effort to achieve an end which he himself wishes to achieve. The end may be making something he wishes to possess or to give to others; or it may be working

> out in concrete material some principle in mathematics, science or geography. It is not so much the thing made or done as the integration required in the making or doing which is of educational value. Many boys who have been labelled 'dull and backward' have revealed unsuspected executive abilities when the emphasis of their training has been shifted from learning to doing.[1]

We often find that boys do not like 'manual work'. They do not want to take their coats off and get to work. This is probably truer of town schools than of rural ones. But wherever such a condition and attitude is found, the real reason is that from the beginning of their school career children have not had the opportunities for doing the constructive handwork that they should have had. The opportunities and the time have been missed, and gradually the desire for this kind of activity has disappeared. It is a matter of the transitoriness of instinct again. If handwork finds a place in the curriculum of every school, not only of the primary schools, in a short time we will find a very different attitude towards it. When it is put into a school, it should be remembered that the workshop should be a place where the boy can work at something that he wants to make himself. Schemes of work should not be too formal. They should be elastic, and though there are naturally certain things which have to be learnt if the boy wishes to make a success of what he is doing, he should be left as much freedom as possible, within reasonable limits, to choose what particular thing he shall make or do.

As has been noted, handwork is especially useful for those who are looked on as backward in academic subjects. Teachers should therefore give such children more handwork. Teachers should also try to arrive at some idea of the special aptitudes of their children, when advising them as to what particular kind of handwork to take up.

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[1] A. Abbott and S. H. Wood, *Report on Vocational Education in India*, pp. 19-20.

The mother-tongue will naturally be prominent in the curriculum of the primary school. It must always be remembered that although the mother-tongue will appear in the curriculum as a separate subject, yet it is a part of *every* subject, and the basis of every subject. Every teacher is a teacher of the mother-tongue in every subject he teaches, in every lesson.

The other subjects in the curriculum of the primary school will be arithmetic, everyday science and general knowledge, which includes geography, civics, and history. (History can be correlated with the mother-tongue in the first two classes, but there should be separate periods for it after that.) Music should also have a place either in the curiculum or as an extra-school activity.

The transition from the primary school to the next stage should come at the age of 11 or 12. This means that the primary school should normally consist of a six-year course with one preparatory year. So far in India primary schools are usually a four- or five-year course; financial reasons, as a rule, precluding the increasing of the length of the primary school course.

The next stage is that of the lower secondary or middle school. This should be a three-year course. The curriculum at this stage should include the following subjects : the mother-tongue, arithmetic, general science (including agriculture and elementary biology), general knowledge (geography, history, civics), English, arts and crafts (including music). Some may wish to include a classical language or a second modern language at this stage. If this addition is made it should be made in the latter part of the middle stage. It would certainly be better if this addition were left till the high school stage.

A word may be said about the place of English. English should be a second language and should be definitely kept in its place. All instruction in other subjects should be in the mother-tongue. In rural schools English should be optional and not compulsory.

Craftwork should continue to occupy a prominent place in the curriculum. The school should not be allowed to develop along mainly academic lines as it does at present. Creative and constructive work should be strongly emphasized wherever possible. Every care must be taken to see that the curriculum does not get divorced from the daily life of the pupils.

> A false distinction between mental and manual work has marred the conduct of schools of the 'secondary' type. They have, ostensibly, set out with the aim of providing a humane, liberal education, an education, that is, which gives due emphasis to individual self-development. Owing to the importance ascribed to mental work in distinction from practical manual work, these schools have concentrated upon a mathematical-linguistic training calculated to provide a discipline for the so-called 'mental faculties'. Consequently their curricula have been, in too many cases, more or less completely divorced from the everyday practical life of the majority of their pupils. In the first place the distinction between mental and manual work is unsound. All conscious human activity involves both mental and manual factors. In fact, the skilled workman engaged upon a piece of constructive craftsmanship has to exercise a good deal more observation, judgement, taste, and

> intelligence, than the secondary school pupil uses in memorizing mathematical formulae and rules of grammar. In the second place no education can be truly liberal unless the pupil is spontaneously interested and works with zest. Now many pupils are gifted with constructive, practical and artistic aptitudes which can find full expression and satisfaction only in corresponding activities. Hence *for some pupils* a well-designed practical curriculum is a better medium for their liberal education than a theoretical mathematical-linguistic curriculum.[1]

The above remarks were written of conditions in England. It is needless to point out how they apply word for word to conditions in schools in this country.

We come now to the high school. The curriculum of the high school is dominated by, in fact dictated by, the university, and until an end is put to this extremely unhealthy state of affairs, high school education will never be what it should be. The matriculation examination dictates what is taught in the last two years of school life, to *all* pupils irrespective of whether they are going on to the university or not. It is legitimate for a university to lay down the conditions on which it will admit students to its classes. It is completely illegitimate for it to be able to lay down the conditions of education in the high stage of everyone who attends a high school. For the great majority of pupils in high schools there should be a curriculum which is drawn up, not under the shadow of the matriculation examination, but with a view to giving the best education to those whose regular schooling will end when they pass out of the high school.

As things are at present, probably the only remedy for the domination of the university, is for educational departments to have their own examinations. As long as there are examinations of the kind we have at present, they will have a dominating effect on what is taught. If we wish to have a good curriculum, and a good syllabus in the high school, we must have a good leaving examination. If education departments would institute their own leaving examinations, to be taken on the completion of the high school course by those who did not wish to go on to the university, this examination and the certificate granted to those who passed it, would gradually dethrone the matriculation examination and the matriculation certificate and put them in their righftul place, that is, qualifications for entrance to the university. For all those who do not wish to go on to the university, but who have at present to pass matriculation to qualify for work of any sort for which a high school education is required, a departmental examination would be a great advantage, for it would enable them to take a course in the high school which would not flout all the principles on which a curriculum should be founded.

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[1] M. A. Pinsent, *The Principles of Teaching-Method* (Harrap, 1941), p. 21.

Let us then consider the subjects that should be included in a high school curriculum which will really cater for the needs of pupils of that age and stage of development.

1. The mother-tongue must have a prominent place in the curriculum, a much more prominent place than it has at present. Instruction should be in the mother-tongue, and, as in the lower secondary and primary school, it must be remembered that although treated as a separate subject, the mother-tongue is not so much a separate subject as the foundation of the whole curriculum. Every teacher is a teacher of the mother-tongue. Special efforts

should be made to encourage creative work in the mother-tongue.

2. Arts and crafts should also have a prominent place in the high school curriculum. At this stage pupils may be allowed to specialize in one particular art or craft.

3. Mathematics will also have a place in the curriculum. But the mathematics taught should have much more relation to life than at present. A great deal of the mathematics taught is useless to the pupil when he leaves school, and the alleged mind-training it gives is transferred only in cases where the subject-matter is similar or where similar methods of work can be used, provided that the essential elements in such methods have been explained to pupils. In most cases the transfer of training is small and is certainly not worth all the work and time that is put into the subject. The mathematics syllabus should be very much simplified. It should be taught as a tool, useful in craftwork, in the ordinary business of life, but no more. More than this is for the specialist.

4. General science should be taught as in the lower secondary school with the possibility of specialization in one particular science.

5. General knowledge, consisting of history, geography and civics, will be the other main division of the syllabus.

6. English will be taught as a second language with much greater emphasis than at present on comprehension.

This curriculum would give the type of education needed by adolescents. Wherever possible, in every subject creative work should be encouraged and keenness in this direction should be taken into account in assessing the result of a pupil's efforts in school. An examination at the end of such a course should include a test in arts and crafts.

For those who wish to specialize, that is, to go on to the university, an alternative course may be offered which will meet the requirements of the university. The mathematics required will be more in line with the present syllabus in mathematics, a classical language may be taken, and more time will have to be put in at English. Even in this specialized course there should be a place for arts and crafts. Science should be taken by every student, though the subject should be general science, with some specialization in one branch if that is felt to be necessary, rather than the subject being confined to one or two branches of science.

This arrangement of the curriculum will necessitate alternative courses in schools. This is inevitable at this stage. It is a case of having different types of schools or of having alternative courses in the school. The second arrangement is probably the better one. In some schools it should be possible to specialize in some crafts so that along with the other work done, vocational training is also given. This will not be possible for many schools in view of the financial difficulties involved in staffing and equipment. But it should be done by schools here and there.

There arises the question of whether there should be different curricula for rural and for urban schools. The general consensus of opinion is that there should be only one curriculum for both types of schools, but that in the case of some subjects, the content will differ somewhat according to the environment of the school. For instance, handcraft should have a place in the curriculum of every school, urban or rural, but the particular crafts taught in the school will vary with the locality in which the school is working. Civics will be taught in both rural and urban schools but the content will differ. The city boy will, for instance, learn something about fire-brigades and their work, while this will be out of the purview of the country boy, who will, however, learn something about the care of cattle. In general principles, however, there will be no difference. The principles underlying the curriculum apply equally to both rural and urban schools.

It would be very undesirable to introduce differences in curriculum which would tend to widen a cleavage which already exists between town and country. All are people of one country and we should do nothing to divide our children into two camps.

To quote the Women's Education Committee's report:

> Again it has sometimes been argued that the curriculum of a rural primary school should not be the same as that of an urban school. From what the Committee have said about the need of relating the child's activities to his environments, it follows that emphasis on the content of various subjects will differ according to the location of the schools. Thus a town school affords greater opportunities for emphasis on industries, with associated activities, whilst the rural school is better situated for outdoor activity, gardening and allied topics. It is not so much a matter of different subjects as of emphasis on suitable content of the same subject.

To quote an English opinion:

> We do not share the view sometimes advanced that a special curriculum should be devised for rural schools; it is even less desirable that the education of the country should be urbanized. The business of the school is to make good human beings, not countrymen or townsmen; nor is it irrelevant to point out that a large number of country children will later live and work in towns. What is necessary is that the curriculum of the school should make every use of the environment of the pupils.[1]

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[1] *The Primary School* (Boar` of Education), p. xxiv.

To quote also American opinions :

> In rural districts, the objectives of elementary education are not different from those in the city, but the means of reaching them and materials available differ from those in large centres of population. . . . The ultimate purpose of elementary education is the same everywhere, but the content and method through which it is achieved varies.[1]
>
> The general objectives of rural education do not differ from objectives of urban education on the same level. Both are concerned in realizing the maximal individual growth and self-expression and in promoting greater social well-being and progress through the on-coming generations. Its responsibilities are to the child and to society as a whole, not to the local group whose children it is educating.[2]

We should not expect that every child who is born in the country is going to stay all this life in the country, nor that every child who is born in the town is going to stay in the town all his life. As teachers or educators we cannot take upon ourselves to determine what a child is going to be. Our job is to help him to develop his powers and abilities and bents as fully as possible. Then he can decide what he is going to do and where he is going to spend his life. But if we are going to do this, our curriculum will be determined, as we have emphasized before, by the child and his needs and possibilities, not by the particular environment in which he happens to be. Hence the curriculum will be the same along general lines wherever the child is.

The same sort of question arises with reference to girls' education. Should the curriculum in girls' schools be different from that in boys' schools, or should boys and girls in the same school have different curricula? The answer again is that the general curriculum should be the same for both. The Women's Education Committee of the Central Advisory Board of Education have also expressed themselves on this point:

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[1] *Research in Constructing the Elementary School Curriculum*, Third Yearbook of the National Society for the Study of Education, p. 260.

[2] Thirteenth Yearbook of the National Society for the Study of Education, p. 23.

> The Committee are of opinion that the general curriculum for primary schools for boys need be no different from that of girls' schools—nor need the methods of teaching this curriculum be different. It follows therefore that the Committee prefer a mixed school to separate schools for boys and girls not merely on the ground of economy but educationally.

And a man's opinion:

> But the general tendency in India has been in support of giving women the same education as men. As Mr K. Natarajan puts it, 'I hold that, in the present circumstances of our country, when a sort of tradition of women's intellectual inferiority has held sway for centuries, it is necessary, at least till the tradition is wholly destroyed, to make no distinction in the courses of study especially in the higher education open to men and women'.[1]

There are no definite mental differences between boys and girls more than there are between boy and boy and girl and girl. The matter of sex does not make a mental difference. No difference should be made in the curriculum for boys and that for girls, as the interests and needs of both are alike. But in higher classes some difference may be made in the content of certain subjects, such as a bias towards home science in the subject of general science for girls. There need be no difference in methods of teaching.

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[1] S. Natarajan, *Social Problems*, Oxford Pamphlets on Indian Affairs (Oxford University Press), No 7, p. 22.

To sum up, these are the modern trends we find in the making of curricula. Firstly there is a trend towards centering the curriculum round the interests and purposes of children. This, as we have seen, is the essence of the project method. Secondly there is a trend to correlate all the subjects of the curriculum round an activity which is a centre of interest of the children. Thirdly the modern curriculum is inclined to be more comprehensive or at least more representative than the curriculum of former days. If we work with the project method we will find that our pupils gradually get a far wider range of knowledge than formerly and that their range of interest also increases. The project method makes a much larger demand on the knowledge and resources of the teacher than does the old form of curriculum. Finally there is a distinct trend towards allowing the curriculum and the work of the school to be adapted to the individual pupil and his needs. So far in India we are only at the beginning of this tendency, but there are clear signs giving hope that this will be the direction of advance.

Recently, in what is called Basic Education, we have seen a definite effort to give practical effect to these principles and trends. In Basic Education the centre of the curriculum is a productive craft and this determines what shall be taught. All that the child learns and does in school is related to the central activity. Basic Education, in fact, differs in one respect only from the project method. When working with the project method, the children, with the guidance of the teacher, choose what their activity shall be. In Basic Education this activity is chosen for them, either by education departments or school authorities. Otherwise the procedure is almost exactly that followed when projects are used. Although the main, central activity is chosen for the children, under Basic

Education projects can be extensively used, and, in fact, there is a much greater opportunity for the use of projects than under the usual system. The central activities generally prescribed under the Basic system are spinning and weaving, and agriculture, the latter being naturally more suited for the great majority of schools, which are rural.

A considerable amount of time is given each day to work at the central activity. The contents of readers in the mother-tongue and other languages are closely related to the central craft, the lessons dealing with subjects that arise out of it. Arithmetic is also closely related to the central craft work and is largely taught through the work that has to be done in estimating costs of production, keeping accounts of sale of produce, and so on. In the same way history, geography and science are correlated with the central craft.

Since the central craft and any subsidiary ones which may be taken up along with it (for example, carpentry naturally comes in with agriculture) have a close connexion with the everyday life of the pupils, Basic Education is integrally related to life, and therefore has an essential value that has not been found in education in the past. The child can see and understand the reason for what he does and learns in school. School and its work become a part of real life, and are not something apart and separate. The value of the work done is tested by the return which the pupil gets for his productive work when it is sold. As a result the child feels that he is doing something real, which has real value.

> Learning by working means an education in *realities*, in first-hand experience, not in second-hand records of experience. Its quality is judged not by an artificial paper test liable to error, but by its

> actual and visible fruits—by the quantity and quality of the yarn, the cloth, the crops and vegetables which result from the intelligent planning of a definite amount of time and labour. There is no room for bluff; there is no pretending to knowledge which one does not possess. Slipshod, careless, unskilled work at any point brings its own natural and inevitable penalty—the badly carded lint cannot be spun, the badly spun thread cannot be woven, the badly-prepared land cannot be redeemed, without redoubled labour for an unsatisfying result. Not the whim of man but the law of nature imposes the penalty, and that fact in itself is an education in honesty and integrity, in patience and essential truthfulness, which it would be difficult to beat. Also, in the words of a wise old master-tailor, 'It's not the work you see but the work you don't see, that makes a good job.' The merely slick and superficial student, who so often and undeservedly makes the best outward show in our present system, is valued at his true worth when education is through real work. Fundamentally, education through work—*real, necessary* work—is an education in truth and reality by its very nature.[1]

Not only is this the case but Basic Education is a type of education which enables the teacher to achieve his aim of the harmonious development of the personality. Children get the opportunity to use all their powers, and the work of the school is no longer geared only to those who have the verbal type of intelligence. Scope is given to those who can best use their intelligence when working with things. These form the great majority of our pupils, and up to the present they have not been catered for in our schools. Under Basic Education also we have an emphasis, not so much on the accumulation of knowledge which may or may not be useful, as on training on how to use knowledge in life.

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[1] M. Sykes, 'Choose Ye This Day' (*N.C.C. Review*, February 1952, p. 81).

Basic Education supplies a training which develops the creative and constructive powers of our children. Every child gets the chance to use his hands, to make and to do. He becomes creative because he learns through active living and not just from books. At the same time mental activity and creativeness are encouraged. This creative development, along whatever line it may take, comes through activity. Basic Education does away with the divorce between words and action. Children learn by doing and loving. They learn cleanliness by actually being clean and by cleaning their surroundings. They learn to serve by actually serving one another.

One of the outstanding characteristics of Basic Education is the emphasis that is laid on community life, on learning the art of living together with others, which, as we have seen, is our ultimate aim. A person who can live well with others, and with whom others can live happily, is one who is dependable, sincere, sympathetic and co-operative. Dependability is developed as individuals learn to be self-reliant and to have a sense of responsibility. Sincerity is cultivated through an education which is integrally related to life. Sympathy develops from practical working with others, as does willingness to co-operate. Basic Education gives us far better opportunities for helping our pupils to develop these qualities than does our present system. One of the most noticeable characteristics of Basic Schools is the community spirit of fellowship which develops in them.

> Learning by working is a training in self-reliance and a sturdy competent independence in the management of one's personal needs. In a Basic School of the kind Gandhiji envisaged, the spirit of co-operative enterprise is not confined to the practice of one

> selected craft at special hours. It enters into everything. It includes the ability to keep oneself fit, to plan sensible meals and to cook them properly, to wash clothes and to keep one's house and surroundings clean and sanitary. It keeps the mind alert to the needs of the school as a whole, and of the neighbourhood and the local community as a whole, whether for cleaning and repairs, for good drinking water, for roads and drainage, for the provision of recreation, the organization of special educational programmes or the celebration of festivals. And all this demands, just as the basic craft demands, that joint exercise of personal responsibility and the power of willing co-operative work which is what a life of brotherliness in the human family means. It cannot be too often repeated that integrity and charity, the love of truth and the love of man, come like the art of swimming, not by preaching but by practice, not by hearing but by doing.[1]

Basic Education is education for democracy. It provides an education which develops the spirit of brotherhood. It gives an opportunity to each individual to develop in the way in which he can best serve the community. It is an education for life and for life in society. It trains in thinking and in action. It does away with the false distinction in value between the work that man does with his hands and the work that he does when sitting at a desk, and so also does away with the gap that exists between the 'man in the street' and the so-called intelligentsia. Above all, it supplies us with the means of achieving our social aim of training our pupils for the truly democratic way of life.

Basic Education is therefore the most hopeful educational development in India at the present time. It gives us a curriculum and a method which promise well for the future of our country.

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[1] M. Sykes, 'Choose Ye This Day' (*N.C.C. Review, February* 1952, p. 81).

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